

# TC-FX707R

## SERVICE MANUAL

US Model  
AEP Model  
E Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

### SPECIFICATIONS

Recording system 4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)

Bias frequency 105 kHz

Signal-to-noise ratio (NAB, at peak level)

| Cassette                | Dolby NR button | OFF   | B-TYPE ON | C-TYPE ON |
|-------------------------|-----------------|-------|-----------|-----------|
| TYPE IV (Sony METALLIC) | 59 dB           | 66 dB | 72 dB     |           |
| TYPE III (Sony FeCr)    | 60 dB           | 67 dB | 73 dB     |           |
| TYPE II (Sony UCX)      | 58 dB           | 65 dB | 71 dB     |           |
| TYPE I (Sony BHF)       | 54 dB           | 61 dB | 67 dB     |           |

Total harmonic distortion

1.0% (with Sony METALLIC and FeCr cassettes)

Frequency response DOLBY NR OFF

- With TYPE IV cassette (Sony METALLIC)  
20 - 19,000 Hz  
30 - 17,000 Hz ( $\pm 3$  dB)  
30 - 13,000 Hz ( $\pm 3$  dB, 0 VU recording)
- With TYPE III cassette (Sony FeCr)  
20 - 19,000 Hz  
30 - 17,000 Hz ( $\pm 3$  dB)
- With TYPE II cassette (Sony UCX)  
20 - 19,000 Hz  
30 - 17,000 Hz ( $\pm 3$  dB)
- With TYPE I cassette (Sony BHF)  
20 - 17,000 Hz

Wow and flutter

0.04% WRMS (NAB)

$\pm 0.14\%$  (DIN)

Inputs

Microphone inputs (phone jacks)

Sensitivity 0.25 mV (-70 dB)

For a low-impedance microphone

Line inputs (phone jacks)

Sensitivity 77.5 mV (-20 dB)

Input impedance 50 k ohms

|                          |               |
|--------------------------|---------------|
| Tape Transport Mechanism | TCM-110R1, R2 |
|--------------------------|---------------|

Outputs

Line outputs (phono jacks)

Rated output level 0.44 V (-5 dB) at load impedance 50 k ohms, with the LINE OUT/PHONE control at "00"  
Output level variable from 0.014 V to 0.44 V  
Load impedance over 10 k ohms

Headphone output

Output level variable from -26 dB to -56 dB at a load impedance of 8 ohms

General

Power requirements 120V ac, 60Hz (US model)  
220V ac, 50/60Hz (AEP model)  
(240V ac adjustable by authorized Sony personnel)

110, 120, 220 or 240V ac adjustable,  
50/60Hz (E model)

25watts (US, AEP model)

27 watts (E model)

Power consumption

Approx. 430x105x275 mm (w/h/d)  
(17x4 1/4x10 7/8 inches)

Dimensions

including projecting parts and controls

Approx. 6.2kg (13 lbs 11 oz)

Weight

0 dB = 0.775 V

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO CASSETTE-CORDER  
**SONY**®



MICROFILM

TC

## FEATURES

### Auto-reverse recording and playback

Continuous recording and playback of both sides of the cassette is possible without turning the cassette over. When the tape reaches its end, the roto-bilateral record/playback head reverses position and the other side of the cassette will be recorded or played back automatically.

The roto-bilateral head assures the same performance characteristics in either tape transport direction.

### Quick reverse

The head reverses position quickly when the tape reaches the leader tape at the end when recording or playing back the front side of a cassette, allowing recording or playback to be continued with little interruption.

### Digital level monitor

The digital level monitor displays the input level exceeding the proper recording level in dB so that you can readjust the recording level appropriately.

### Automatic fader

During recording, special fade-in and fade-out effects can be made automatically simply by pressing the AUTO FADER button.

### Automatic attenuator

The automatic attenuator lowers the recording level automatically when the level of input signals is beyond the proper recording level. This assures undistorted recording.

### Audio memory

The recording and playback settings: the recording level, the Dolby NR setting, for example, can be memorized and instantly retrieved. Two settings can be made for each type of tape.

### Function memory

A total of 8 steps of tape operations controlled by the ▶, ◀, ▶▶, ◀◀ and RESET buttons can be memorized and activated in the memorized sequence by pressing one button.

### Cassette stabilizer

The cassette stabilizer holds the cassette firmly to suppress vibration and makes the reproduced sound clear and the location of the sound image stable.

### Digital display

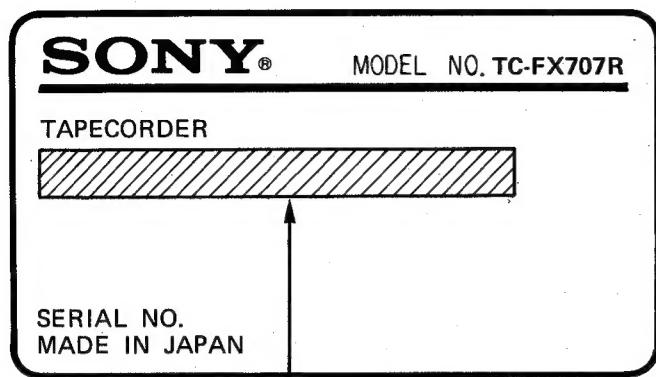
The recording level, recording level balance and LINE OUT/headphone level are displayed in digits for accurate and easy reading.

### Other useful functions

- The LA (LaserAmorphous) record/playback head provides a wider dynamic range and a more extended frequency response.
- The C-type Dolby NR system reduces tape noise twice as effectively as the conventional B-type system.
- The AMS (Automatic Music Sensor), blank skip and music scan functions allow you to locate the desired selection easily.
- The DIRECTION MODE buttons control the direction of tape movement.
- The automatic tape select system adjusts the cassette deck to achieve the optimum recording and playback characteristics for each tape type.
- The digital linear counter indicates the elapsed or remaining recording or playback time in minutes and seconds. The pre-end winker warns that the tape is about to run out during recording.
- Remote control operations are possible.
- The deck can be turned on and off using an optional timer.

## MODEL IDENTIFICATION

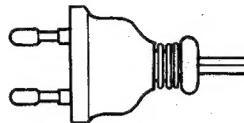
— Specification Label —



US model: AC: 120 V 60 Hz 25W  
 AEP model: AC: 220 V 50/60 Hz 25W  
 E model: AC: 110, 120, 220, 240 V 50/60 Hz 27W

## — Power Cord —

E<sub>3</sub> model: euro-plug  
 1-555-734-00



E<sub>2</sub> model: parallel-blade plug  
 1-551-472-00



## SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

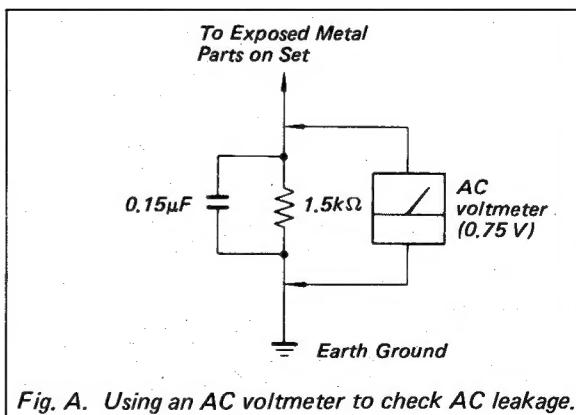
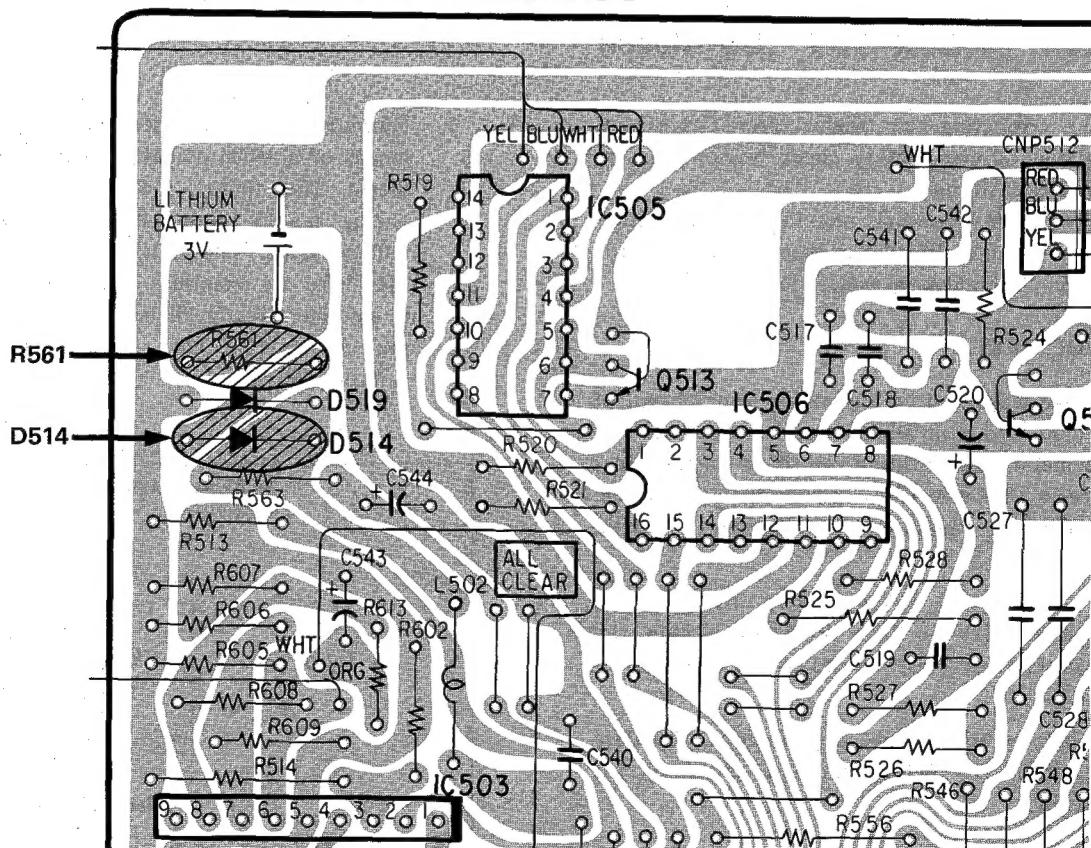


Fig. A. Using an AC voltmeter to check AC leakage.

**Servicing Precaution**

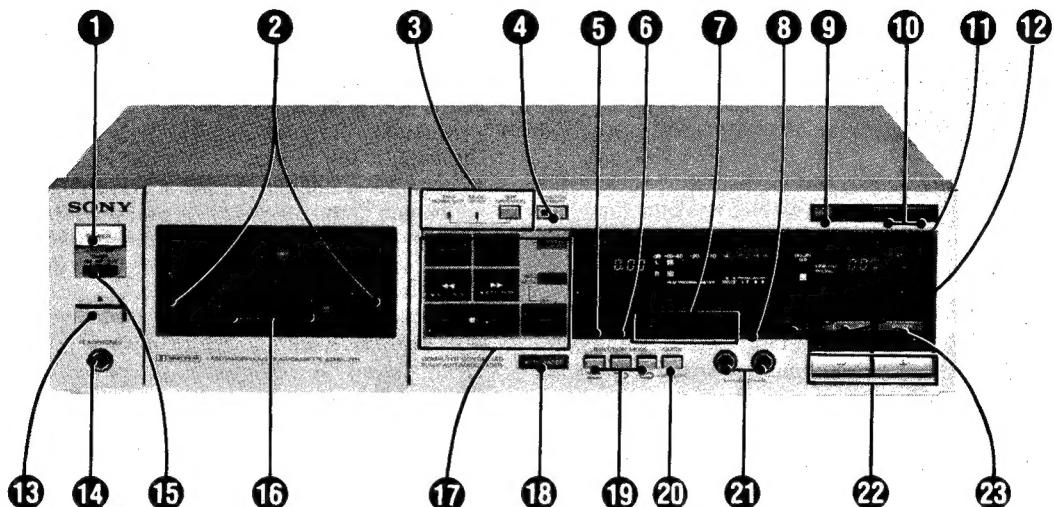
1. Before starting to replace ICs or other parts, be sure to turn off the back-up battery by disconnecting R561 or D514.
2. After completing to repair, connect R561 or D514 and proceed as follows as soon as possible, to return to normal back-up mode. Otherwise, the energy of the back-up battery will be wasted.
  - (1) Turn on the power.
  - (2) Short the "ALL CLEAR" jumper wire instantly with a screwdriver.
  - (3) Turn off the power.
3. When the power is turned off, and the back-up battery is connected, never short the conductive pattern on the circuit board.
4. When CT301 is adjusted, an insulating tube should be over an adjustment screwdriver used.

**【SYSTEM CONTROL BOARD】**

## FUNCTION OF CONTROLS

Each number in the text is keyed to that of the photo and illustrations.

### Front panel



#### ① POWER switch

This turns the power on or off.

#### ② Cassette stabilizer

#### ③ TAPE OPERATION button and indicators

To activate the AMS/blank skip function or the music scan function, press the TAPE OPERATION button, so that the corresponding indicator lights up. Each time the button is pressed, the AMS/BLANK SKIP indicator, MUSIC SCAN indicator or no indicator lights up in sequence.

#### ④ FUNCTION MEMORY button and indicator

Used for memorizing a series of tape operations and starting the memorized operations. (See "Function memory" on page 14.)

#### ⑤ RESET button

Press to reset the tape counter to zero.

#### ⑥ MEMORY button

Used for the memory stop/play. See page 14.

When this button is pressed, the MEMORY indicator appears on the display.

#### ⑦ AUTO/III tape select button and tape type indicators

When a cassette is inserted, the appropriate tape type indicator lights up and the optimum recording and playback settings for the tape are set by the automatic tape select system. Press this button if the indicator and the type of tape inserted are not the same. This button is operable only when a cassette has been inserted.

#### ⑧ DOLBY NR button

Press this button to select the Dolby\* NR system when recording or playing back. The type of Dolby NR system applied will change in the following sequence when the button is pressed: Dolby NR B type (B indicator illuminates), Dolby NR C type (C indicator illuminates), Dolby NR off (indicator off).

#### ⑨ WRITE button

When memorizing the recording and playback settings on the AUDIO MEMORY buttons, first press this button, then the A or B AUDIO MEMORY button.

#### ⑩ AUDIO MEMORY buttons and indicators

The recording and playback settings for each type of tape can be memorized on A and B buttons. The memorized settings can be retrieved simply by pressing the A or B button. See page 10.

#### ⑪ LINE OUT/PHONE level control button

This button adjusts the output level of the LINE OUT jacks and the headphone level. When the + side of the button is pressed, the level will increase by 2 dB, and when the - side is pressed, the level will be attenuated by 2 dB, up to 30 dB. When the button is kept depressed, the level changes continuously. The attenuated level is indicated on the audio level display. The digits "00" indicate the maximum output level.

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## ⑫ BALANCE (recording level balance) control button

This button adjusts the balance of the left and right channel recording levels. When the L side of the button is pressed, the sound image to be recorded will be moved to the left as the level of the right channel is attenuated. When the R side is pressed, the sound image will be moved to the right. The difference of the level in dB between two channels is displayed on the audio level display. Normally set the balance to 00.

Example of the balance setting



## ⑬ ▲ (eject) button

Press this button to open the cassette holder.

## ⑭ HEADPHONES jack (stereo phone jack)

Connect a pair of headphones either to monitor the input signals to be recorded or to listen to a recording in the playback mode.

## ⑮ TIMER switch

You can set the unit to record or playback at a predetermined time by connecting any commercially available timer.

## ⑯ DIRECTION indicators

▷ (forward) indicator: Lights to show that the front side of the cassette is being played back or recorded on.

◁ (reverse) indicator: Lights to show that the reverse side of the cassette is being played back or recorded on.

For a timer-activated recording or playback, make sure which indicator is illuminated.

## ⑰ Function buttons

It is possible to switch directly from one mode to another.

▷ (forward) button: Press this button to play the front side of the cassette. To record, press this button while holding the ● button down. The tape is transported to the right.

◁ (reverse play) button: Press this button to play back the reverse side of the cassette. To record on the reverse side, press this button while holding the ● button down. The tape will be transported to the left.

▶ (fast-forward) button: Press this button to advance the tape rapidly to the right. It is also used for the AMS and music scan functions.

◀ (fast-reverse) button: Press this button to advance the tape rapidly to the left. It is also used for the auto play, AMS and music scan functions.

■ (stop) button: Press this button to stop the tape, or to disengage the ● button or the FUNCTION MEMORY button.

● REC (record) button: Press this button together with the ▷ or ▷ button to start recording. When this button is pressed for recording level adjustment, the deck will detect the tab of the cassette and the indicators of the ▷ and ▷ buttons will blink to indicate that a recording can be made. If the tab on one side is removed, the corresponding indicator will not light.

○ REC MUTE (record muting) button: Press this button to eliminate unwanted material and to insert a blank space during recording.

■ PAUSE button: Press this button to stop the tape running for a moment during recording or playback.

## ⑯ AUTO FADER (automatic fader) button

Press this button to fade in or fade out the recording.

## ⑰ DIRECTION MODE buttons

Depress one of the buttons to select the mode of tape movement for recording and playback.

↔ (one-direction) button: To record or play back one side of the cassette.

↔ (one-cycle) button: To record or play back both sides of the cassette. If this button is pressed when the reverse side of the cassette is being recorded or played back, the tape will stop at the end of that side.

○ (five-cycle) button: To play back both sides of the cassette five times. If this button is pressed when the reverse side of the cassette is being recorded or played back, the tape will stop at the end of the 5th playback of the reverse side so that the front side will have been played back only four times.

The recording will stop at the end of the reverse side.

## ⑲ QUICK reverse switch

Depress this switch (↔ ON) to reverse the direction of the tape quickly during recording or playback, when the tape reaches the leader tape.

To release the quick reverse function, press the switch again. The tape will reverse the direction at the end of the leader tape.

This quick reverse function operates only from the forward direction to the reverse direction.

## ⑳ MIC jacks (phone jack)

Any low-impedance microphone equipped with a phone plug may be used.

## ㉑ REC LEVEL (recording level) control buttons

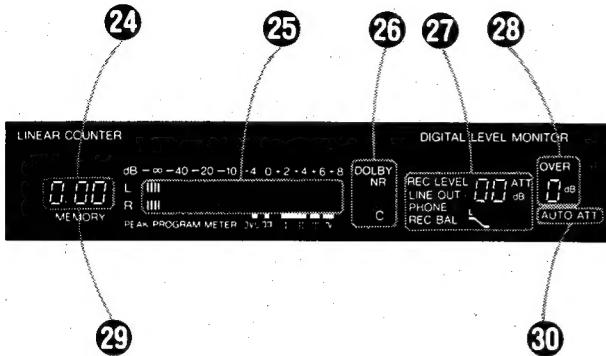
Adjust the recording level by observing the peak program meters and the digital level monitor. Press the + button to increase the level, and the - button to decrease it. Each time the button is pressed, the level will change by 1 dB. When the button is held down, the level will change by 2 dB continuously. The attenuated level is displayed on the audio level display. The digits "00" indicate the maximum level.

## ㉒ AUTO ATTENUATOR (automatic attenuator) button

Press this button to attenuate the preset recording level automatically when the input level is too high, so that the recording will not be distorted. The AUTO ATT indicator appears on the display. Press this button again to cancel the automatic attenuator function.

When the automatic attenuator is engaged, the digital level monitor display does not operate and always indicates

## Display section

**28 DIGITAL LEVEL MONITOR**

Indicates the input level exceeding the proper recording level for each type of tape, in 1dB steps. When the input level is lower than the proper level, the display remains **OVER**.

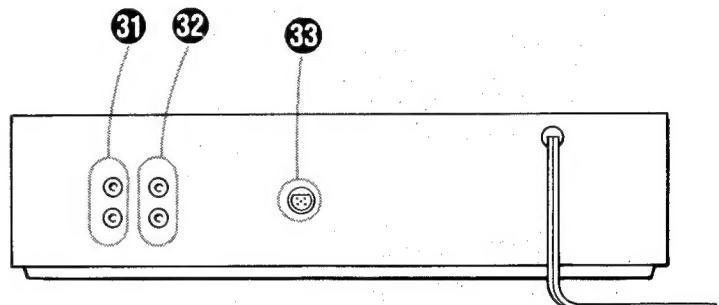
**29 MEMORY indicator**

When the **MEMORY** button is pressed, this indicator shows that the memory counter function is engaged.

**30 AUTO ATT (automatic attenuator) indicator**

When the **AUTO ATTENUATOR** button is pressed, this indicator appears to indicate the automatic attenuator is engaged.

## Rear panel

**31 LINE IN (line inputs) jacks (phono jack)**

Accepts tape outputs from an amplifier for tape recording and line outputs from another tape deck when duplicating a tape from that unit.

**32 LINE OUT (line outputs) jacks (phono jack)**

Accepts tape inputs from an amplifier for playing back a tape and line inputs from another tape deck for duplicating a tape onto that unit.

**33 REMOTE control connector**

Connect the optional RM-70 remote control unit to operate the tape transport functions from a distance. The tape deck function buttons are still operative when the remote control unit is connected. Read the instruction manual of your remote control unit before operating.

**24 Digital linear counter**

Indicates the tape running time. See "Digital linear counter" on page 11.

**25 Peak program meters**

These meters show the peak input level of each channel during recording, and recorded levels in the playback mode. For easy reading the highest input of each channel is held for about 4 seconds on the scale, except when a higher peak occurs before 4 seconds have passed, in which case that peak is immediately indicated.

**26 Dolby NR indicator**

The selected Dolby NR B or C type is indicated here.

**27 Audio level display**

The attenuated level set by the REC LEVEL buttons, LINE OUT/PHONE button, or BALANCE button is indicated here.

● When the REC LEVEL button is pressed, the display shows the recording level (REC LEVEL).

When the + REC LEVEL button is pressed, the display will count down to **00ATT** (maximum recording level). When the - button is pressed, the display will count up to **55ATT**, and then to **- - ATT** (infinitesimal level).

● When the LINE OUT/PHONE button is pressed, the display shows the output level of the LINE OUT jacks or the headphone level (LINE OUT/PHONE).

When the + side of the button is pressed, the display will count down to **00ATT** (rated output level). When the - side is pressed, the display will count up to **30ATT** (the minimum output level) in 2 dB steps.

● When the BALANCE button is pressed, the display shows the recording level balance of the right and left channels (REC BAL).

The display **00ATT** indicates the sound image is at the center. Pressing the L side will move the sound image to the left, shown by **L**. Pressing the R side will move the sound image to the right, shown by **R**. The **L** or **R** display will remain when the digit display is changed to the REC LEVEL indicator.

● When the BALANCE or REC LEVEL button is released, the display will automatically revert to the LINE OUT/PHONE level indicator, or the REC LEVEL indicator if the ● button is engaged.

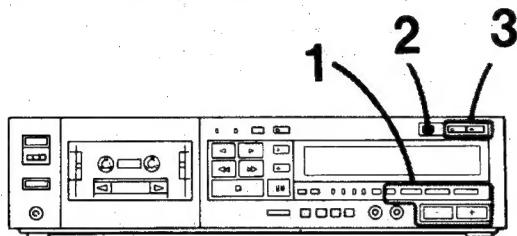
## RECORDING AND PLAYBACK USING THE AUDIO MEMORY

This cassette deck can memorize and retrieve recording and playback settings. Two different settings can be memorized for each of the four types of tape (a total of 8 settings), on the A and B AUDIO MEMORY buttons.

Once a setting has been memorized, you can retrieve it only by pressing the same button.

The recording level, recording level balance, line out/headphone level, Dolby NR system and automatic attenuator ON/OFF settings can be memorized.

### TO MEMORIZE THE SETTINGS



1 Adjust the settings to be memorized.

2 Press the WRITE button.

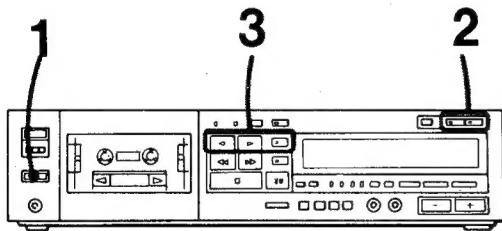
The indicators on both A and B AUDIO MEMORY buttons blink.

3 While the indicators are blinking (about 3 seconds), press either the A or B button on which you want to memorize the settings. The indicator of the pressed button will light steadily to indicate the settings have been memorized.

Repeat the same steps to memorize other settings for the same type of tape on the other AUDIO MEMORY button, and settings for the other types of tape.

Once the settings are memorized, they cannot be cancelled until new settings for the same type of tape are memorized on the same AUDIO MEMORY button. We recommend that you label the cassette according to the AUDIO MEMORY button used.

### TO RECORD OR PLAY BACK USING THE AUDIO MEMORY



1 Press the  $\Delta$  button and insert a cassette.

2 Press the A or B AUDIO MEMORY button.

The settings for the type of tape inserted will be recalled.

3 Start recording or playback.

When the cassette is changed to one with a different type of tape or when the AUTO/III button is pressed while the indicator of the A or B AUDIO MEMORY button is illuminated, the settings of the button will be recalled for the type of new cassette.

### TO CHANGE SOME OF THE SETTINGS ON A BUTTON

Simply change the settings as you want. The original settings memorized can be recalled later simply by pressing the AUDIO MEMORY button again.

If you change the recalled settings, the indicator on the AUDIO MEMORY button goes off.

### Note on the memory back-up circuit

The settings memorized on the AUDIO MEMORY buttons and the figures of the tape counter will not be cancelled even when the power is turned off, because of a built-in memory back-up battery. When the power is turned on again, the memorized settings which there were just before the power was turned off will be recalled. If the memory back-up battery is exhausted after prolonged use, the memory contents will be cancelled. Set the controls as required before recording or playback. The battery can be replaced by your Sony dealer.

**Note:** Even if the battery is exhausted, the other operations of the cassette deck can be activated normally.

## DIGITAL LINEAR COUNTER

The first two digits of this tape counter show the approximate recording or playback time in minutes, and the last two digits show the seconds. The figures increase as the tape runs to the right, and decrease as the tape runs to the left, shown with a minus sign if they go beyond 0.00.

The figures on the tape counter and the memory counter function are memorized while the power is turned off.

### TO INDEX THE WHOLE TAPE

Before recording or playback, press **RESET**.

The counter shows 0.00.

As the tape runs, the figures of the counter change. Note the numbers and the program being recorded or played back. Any point of the tape can be easily located later by reference to these numbers.

### TO CHECK THE AVAILABLE RECORDING TIME ON ONE SIDE

1 At the beginning of the tape, press **RESET**.

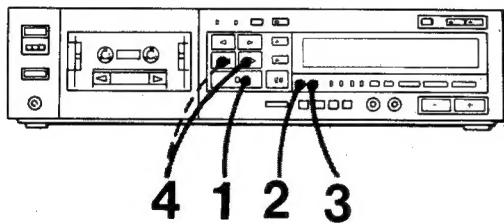
The counter shows 0.00.

2 Press **►►** or **◀◀**.

The tape advances rapidly to the end.

At the end of the tape, the digits will show the approximate available recording time.

### TO CHECK THE REMAINING RECORDING TIME



1 Press **■**.

The tape stops at the point at which you wish to begin recording.

2 Press **RESET**.

The counter shows 0.00.

3 Press **MEMORY**.

The memory counter activates. (The **MEMORY** indicator appears.)

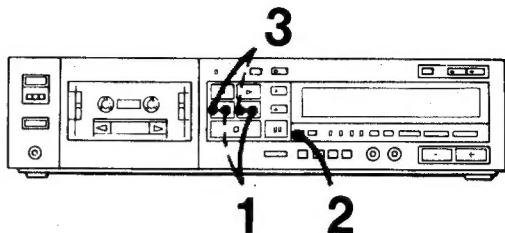
4 Press **►►** or **◀◀** to advance the tape.

The tape advances rapidly to the end. As the tape is moving, the digits will show the approximate recording time that remains.

Press **◀◀** or **►►** to rewind the tape.

The tape will stop at 0.00.

### TO MONITOR THE REMAINING TIME WHILE RECORDING



1 Press **►►** or **◀◀** to advance the tape rapidly to the end.

2 Press **RESET**.

The counter shows 0.00.

3 Press **◀◀** or **►►** to rewind the tape to the beginning. When it reaches this point, the digits will indicate the approximate recording time on that side of the cassette.

#### Start recording.

The digits will change as the recording goes on, and you can monitor the remaining recording time at any point on the tape.

The function memory facilitates this tape operation. See page 14.

### THE ACCURACY OF THE COUNTER

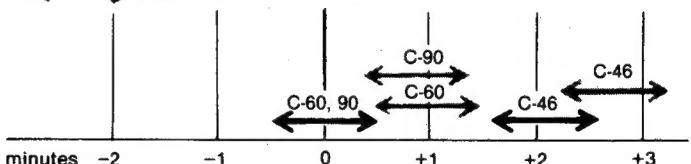
This counter is not actually a digital clock, so that the displayed figures are not exactly equal to the actual elapsed time. The accuracy will vary depending on the type of tape being used.

This counter has been designed using Sony C-60 cassettes as the standard. Make sure that the displayed time is greater than the time required when using a Sony C-46 cassette.

#### Difference between the counter indication and actual running time on one side of a cassette

←→ Sony BHF, AHF, UCX-S, UCX and FeCr cassettes

←→ Sony METALLIC cassettes



The counter indication is less than the actual tape running time.

The counter indication is more than the actual tape running time.

### THE RECORDING PRE-END WINKER

When the tape approaches the end during recording on either side of the cassette, the digits of the counter will blink, warning that the tape is about to run out. The blinking will begin 2 to 3 minutes before the end of the tape for a Sony C-46 or C-60 cassette, and 3 to 5 minutes before the end of the tape for a Sony C-90 cassette.

Note that the pre-end winker may not function when using a cassette whose hubs are very thick.

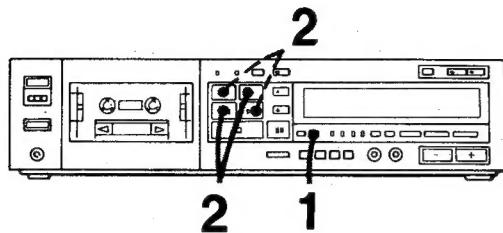
In the illustrations,

— shows the operation for the front side recording or playback.

--- shows the operation for the reverse side.

## AUTO PLAY AND MEMORY STOP/PLAY

**AUTO PLAY**—To play from the beginning of the tape



1 Make sure that the **MEMORY** indicator is not displayed.  
(If it is displayed, press the **MEMORY** button.)

**2 Rewind the tape.**

To play back the front side, while keeping **◀◀** pressed, press **▶▶**.  
To play back the reverse side, while keeping **▶▶** pressed, press **◀◀**.

After the tape is completely rewound, the tape will automatically replay.

**Why does the tape stop around -0.01?**

—In order to avoid cutting off the starting point.

**How does one rewind the tape further than 0.00?**

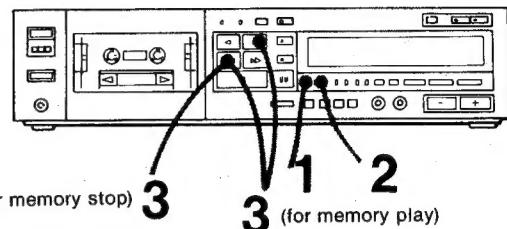
—Press the **◀◀** or **▶▶** button again.

**When should one press the **MEMORY** button?**

—Any time. If the **MEMORY** indicator is displayed, the tape will stop or replay automatically at the 0.00 point.

**MEMORY STOP**—To rewind the tape to the desired point

**MEMORY PLAY**—To rewind the tape and play from the desired point



**1 Play back or record, and press **RESET**.**

The counter shows 0.00.

**2 Press **MEMORY**.**

The memory counter activates and the **MEMORY** indicator appears.

**3 After playback or recording,**

**For memory stop, press **◀◀**.**

The tape rewinds and stops at 0.00 automatically.

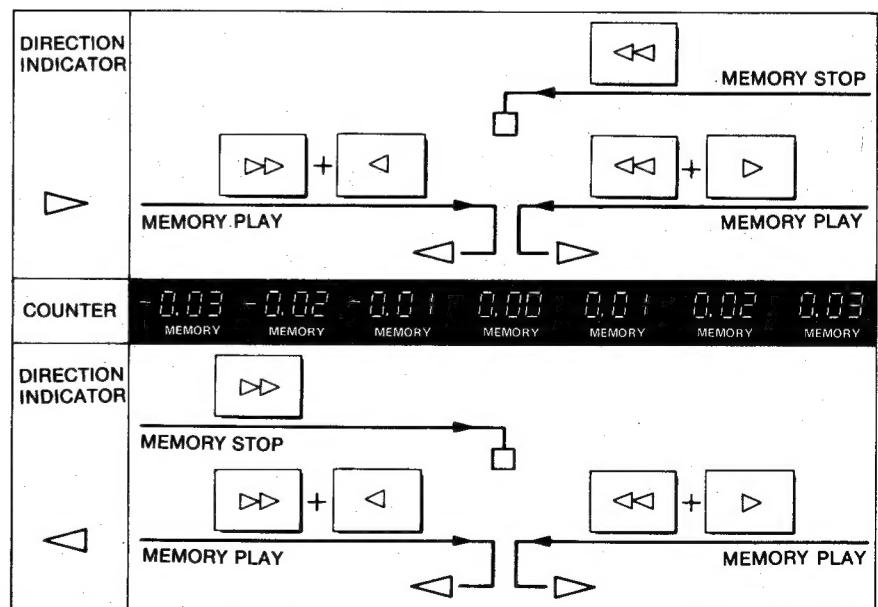
**For memory play, while holding **◀◀** down, press **▶▶**.**

The tape will replay automatically after rewinding to 0.00.

● You can operate the "memory stop" and "memory play" functions during playback of the reverse side of the cassette. Press the **▶▶** button for memory stop, and the **▶▶** and **◀** buttons for memory play.

● The memory play function can operate even if the **DIRECTION** indicator does not correspond to the direction of the tape to be played back.

● The AMS and the music scan functions have priority over the auto play function. When using the auto play function, make sure that none of the indicators of the **AMS/BLANK SKIP** or the **MUSIC SCAN** buttons lights.



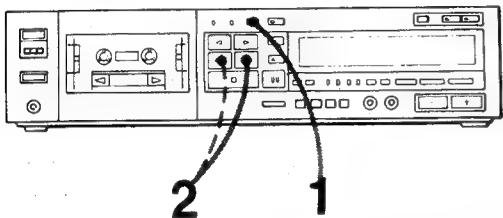
## VARIOUS TAPE OPERATIONS

### AMS (AUTOMATIC MUSIC SENSOR)

—To play from the beginning of the following selection or the selection being played

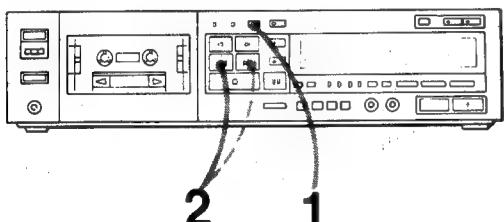
During playback, use the AMS to locate the beginning of the selection being played or the following selection. The AMS searches either forward or in reverse for the blank space between selections. Playback will begin automatically from the beginning of the selection.

To play from the beginning of the following selection



- 1 Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.
- 2 During playback of the front side of the cassette (when the > indicator lights), press ►►. The indicator of the ► button will blink rapidly.
- During playback of the reverse side (when < indicator), press <►. The indicator of the < button will blink rapidly.

To play from the beginning of the selection being played



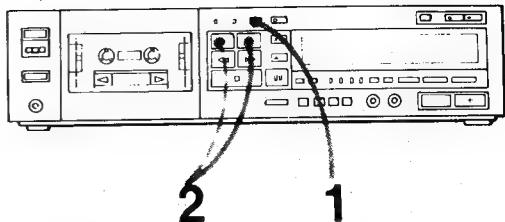
- 1 Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.
- 2 During playback of the front side of the cassette (when > lights), press <►. The indicator of the ► button will blink rapidly.
- During playback of the reverse side (when < indicator), press ►►. The indicator of the < button blinks rapidly.

If you operate the AMS at a blank space between selections, playback may begin from the beginning of the selection after the following one or from the beginning of the previous selection.

#### Notes

- When using the AMS function, make sure that the MEMORY indication is not displayed since the counter memory function has priority over the AMS function. If it is displayed, press the MEMORY button.
- The AMS cannot search for a selection on the other side of the cassette, even if such tape movement is selected by the DIRECTION MODE button.

### BLANK SKIP—To play skipping blank spaces



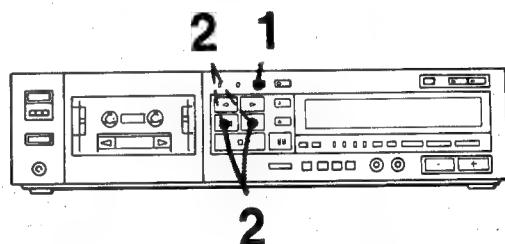
- 1 Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.
- 2 Start playback.

Where there is a blank about 10 seconds long, the cassette deck will automatically go into the fast-forward mode and will resume playback when a new selection begins.

#### Note

When the tape reaches the end in fast-forward mode, the head reverses and the fast-forward mode will continue until a new selection begins on the other side, if such tape movement is selected by the DIRECTION MODE button.

### MUSIC SCAN—To play only the beginnings of all selections in sequence



- 1 Press TAPE OPERATION twice to illuminate the MUSIC SCAN indicator.
- 2 To locate the beginnings of the selections during playback of the front side of the cassette (when the > indicator lights)
  - For the selections ahead, press ►►.
  - For the previous selections, press <►.

To locate the beginnings of the selections during playback of the reverse side of the cassette (when < indicator)
 

- For the selections ahead, press <►.
- For the previous selections, press ►►.

The deck skips the selection being played in the fast-forward or rewind mode, plays the beginning of the following selection for about 10 seconds, then goes into the fast-forward or rewind mode again. This cycle will be repeated for each selection.

During fast-forward or rewind, the indicator of the ► or < button blinks rapidly.

During playback, the indicator of the ► or < button blinks slowly. If the ► or < button is pressed during playback, the music scan function will be cancelled and normal playback will resume. The indicator of the ► or < button will light steadily.

## FUNCTION MEMORY

### Note

The unit will automatically shut off at the beginning or end of the side of the cassette on which the music scan started, even if one-cycle play or five-cycle play is selected by the DIRECTION MODE button.

### Notes on the AMS, blank skip and music scan functions

• A low-frequency monotone signal may have been recorded for 2 seconds or so at the beginning and at the end of some commercially available recorded cassettes. If the blank skip function is used with such a cassette, it may malfunction and repeat the last selection on the tape over and over again.

If this happens, erase the monotone signal or press the TAPE OPERATION button so that neither the AMS/BLANK SKIP or MUSIC SCAN indicator illuminates.

• If there is noise in the space between selections, or if the space is less than 4 seconds long, the AMS or the music scan may not operate.

The record muting facility of this cassette deck can make a 4-second blank space that will assure correct operation on any recorded tape.

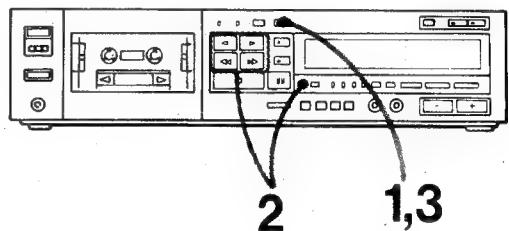
• If the recorded music includes a long pause, if it continues for a time at such low frequencies as those of a bass saxophone or at very low volume, or if its volume increases or decreases gradually, as may happen with classical music, the AMS, music scan or blank skip will treat these passages as blanks and playback will begin in the middle of a selection. If this happens, press the  $\blacktriangleright$  or  $\blacktriangleleft$  button.

• If the  $\blacktriangleright$  or  $\blacktriangleleft$  button is pressed immediately before the following selection, the AMS, blank skip or music scan may skip the selection and search for the selection after the one immediately following.

Up to 8 steps of tape operations controlled by the  $\blacktriangleright$ ,  $\blacktriangleleft$ ,  $\blacktriangleright\blacktriangleright$ ,  $\blacktriangleleft\blacktriangleleft$  and RESET buttons can be set on the FUNCTION MEMORY button and can be executed in the memorized sequence automatically simply by pressing one button.

### Examples of the operations to be memorized

- ①  $\blacktriangleright\blacktriangleright$  button  $\rightarrow$   $\blacktriangleleft\blacktriangleleft$  button  
(to wind the tape uniformly)
- ②  $\blacktriangleright$  button  $\rightarrow$   $\blacktriangleleft\blacktriangleleft$  button  $\rightarrow$   $\blacktriangleright$  button  
(to repeat playback of the front side of the cassette)
- ③  $\blacktriangleright$  button  $\rightarrow$   $\blacktriangleleft$  button  $\rightarrow$   $\blacktriangleright$  button  $\rightarrow$   $\blacktriangleleft$  button  
(to play both sides of the cassette twice)



- 1 Stop the tape, and press FUNCTION MEMORY. The indicator of the FUNCTION MEMORY button lights up.
- 2 Press  $\blacktriangleright$ ,  $\blacktriangleleft$ ,  $\blacktriangleright\blacktriangleright$ ,  $\blacktriangleleft\blacktriangleleft$  and RESET in the order in which you want the deck to operate later. When a button is pressed, the indicator of the FUNCTION MEMORY button blinks once to indicate the operation has been set in the memory.
- 3 Press FUNCTION MEMORY again. The memorized operation starts.

During the operation, the indicator on the FUNCTION MEMORY indicator blinks slowly.

- If more than 8 buttons are pressed to be memorized, the indicator of the FUNCTION MEMORY button blinks rapidly, indicating the memory is full. No more buttons cannot be memorized.
- To erase the memory contents while memorizing, press the  $\blacksquare$  button.
- To cancel the on-going memory operation, press a function button or RESET button. The indicator of the FUNCTION MEMORY button goes off.

### How to work the counter memory function when the memorized operation is being executed

- When the MEMORY indicator is displayed, the tape stops at the 0.00 point of the tape counter and the deck goes into the next operation memorized in the following cases.
- When the  $\blacktriangleleft\blacktriangleleft$  button is pressed with the  $\blacktriangleright$  indicator illuminated.
- When the  $\blacktriangleright\blacktriangleright$  button is pressed with the  $\blacktriangleleft$  indicator illuminated.
- When the MEMORY indicator is not displayed, the tape stops at the beginning or at the end, and the deck goes into the next operation memorized.

### Notes

- While executing the memorized operations, the remote control operation, the AMS, blank skip, music scan and quick reverse functions cannot be used.
- The memorized operations have priority over the tape movement selected by the DIRECTION MODE button.
- The function memory is erased when the unit is turned off.

## RECORD MUTING

By pressing the **O** button during recording, four seconds interspacing is provided automatically, eliminating unwanted program material such as broadcasting commercials. While the record muting is operating, the incoming signal is not recorded on the tape but it continues to register on the meters and feed to the monitor so that you know exactly what is going on.

- 1 Press the **O** button when the segment you do not want to record begins. The indicator of the **II** button will blink.  
A blank is made while the tape continues to run and the tape path pauses automatically after four seconds.  
The indicator of the **II** button will illuminate.
- 2 When you want to resume recording, press the **II** button.  
The indicator of the **II** button will go off.

### To insert a blank less than four seconds long

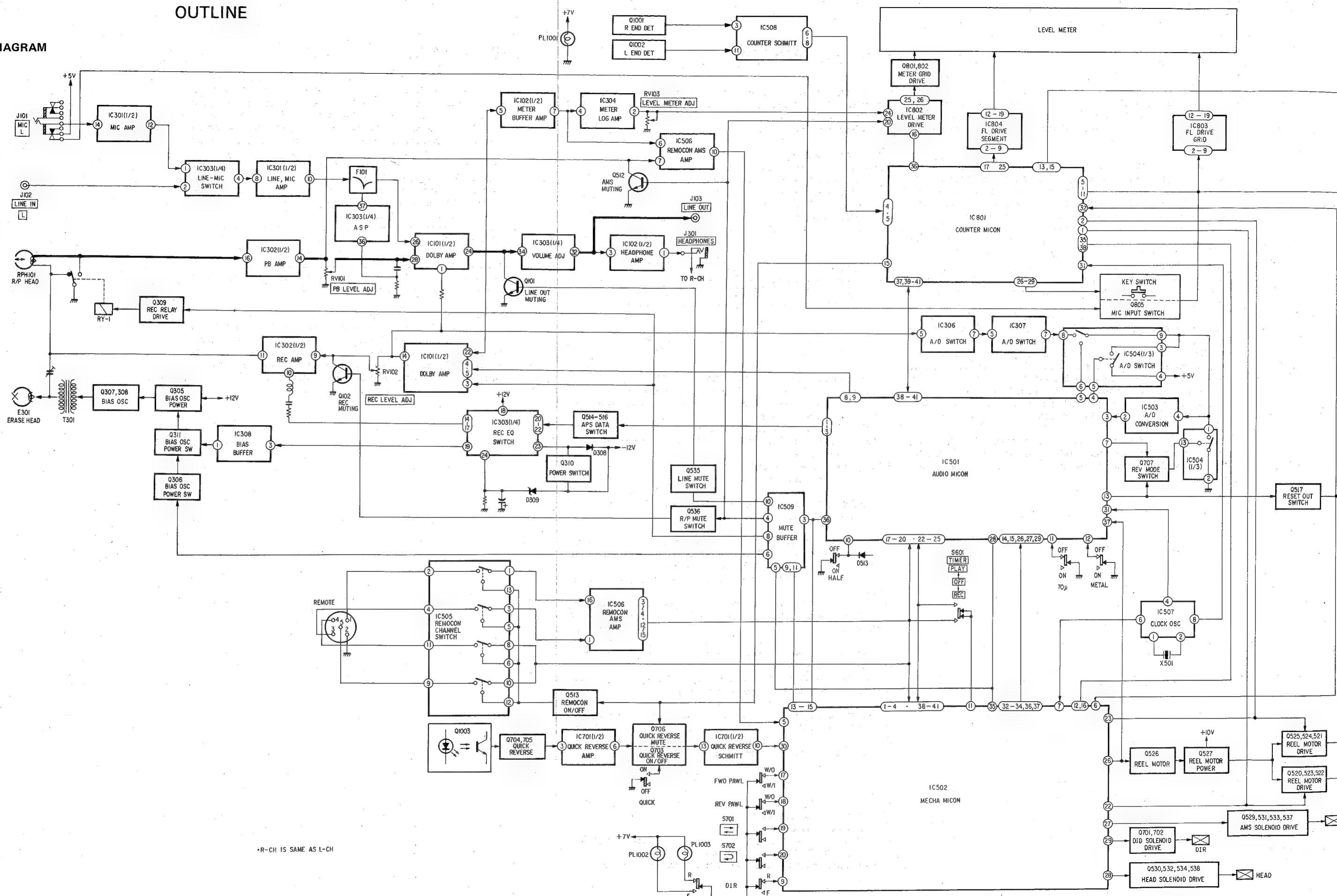
Press the **O** button to mute recording. Press the **II** button when you want to resume recording.

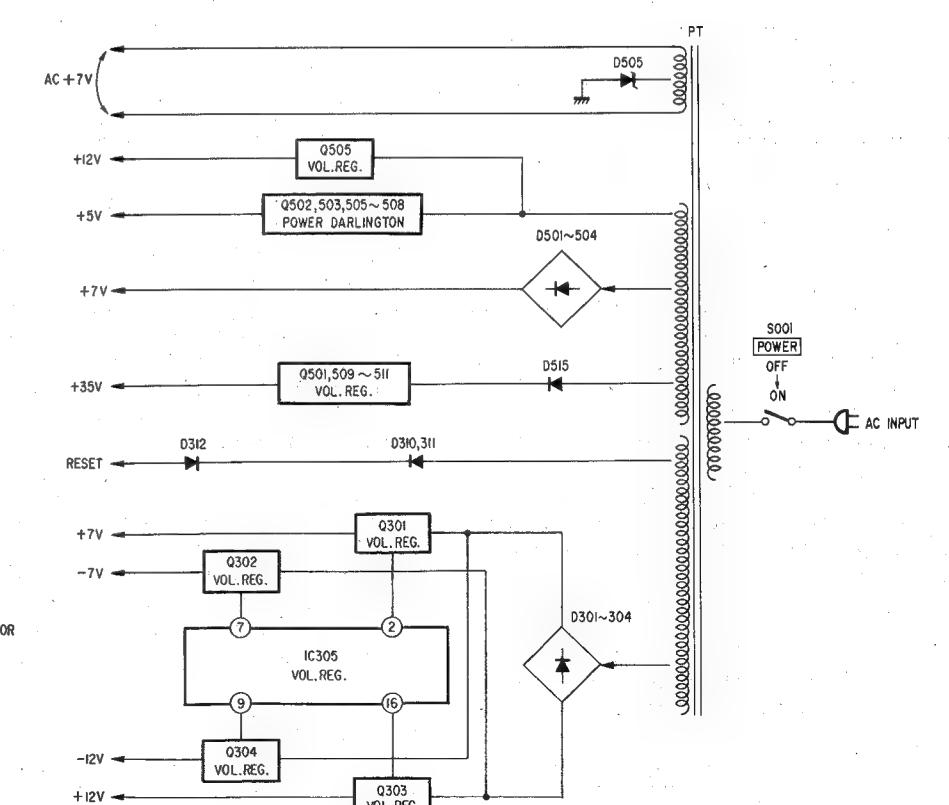
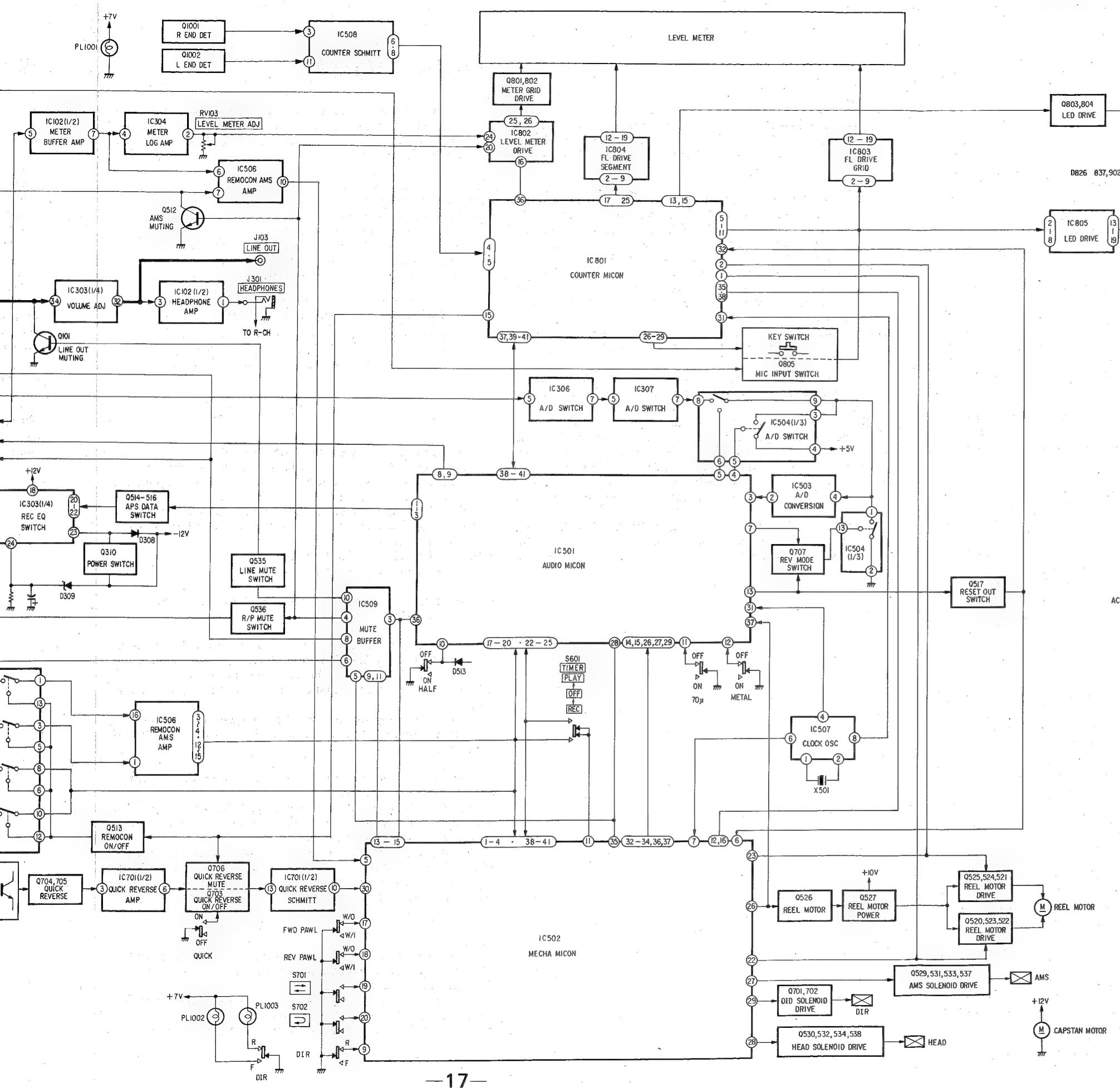
### To insert a blank over four seconds long

Hold down the **O** button for as long as you want the blank segment on the tape to be. After four seconds, the indicator of the **II** button will blink more rapidly. When you release the **O** button, the tape deck will be in the pause mode. When you want to resume recording, press the **II** button to release the pause mode.

## SECTION 1 OUTLINE

## 1-1. BLOCK DIAGRAM





## 1-2. CIRCUIT OUTLINE

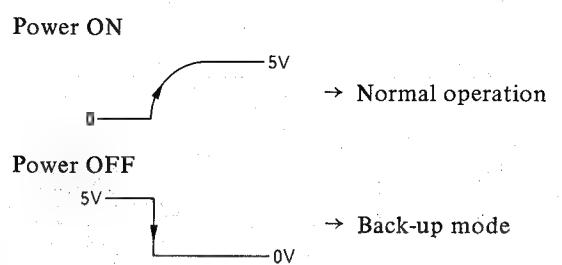
TC-FX707R is a stereo cassette deck having an ASP IC CX7919 (electronic volume control). This IC controls the volume of the audio circuit and serves as switches.

The three microcomputers are employed as mechanical controller in this set. As the data signals from each microcomputer are related with the other one, be careful to the following explanation.

## 1. Three microcomputers

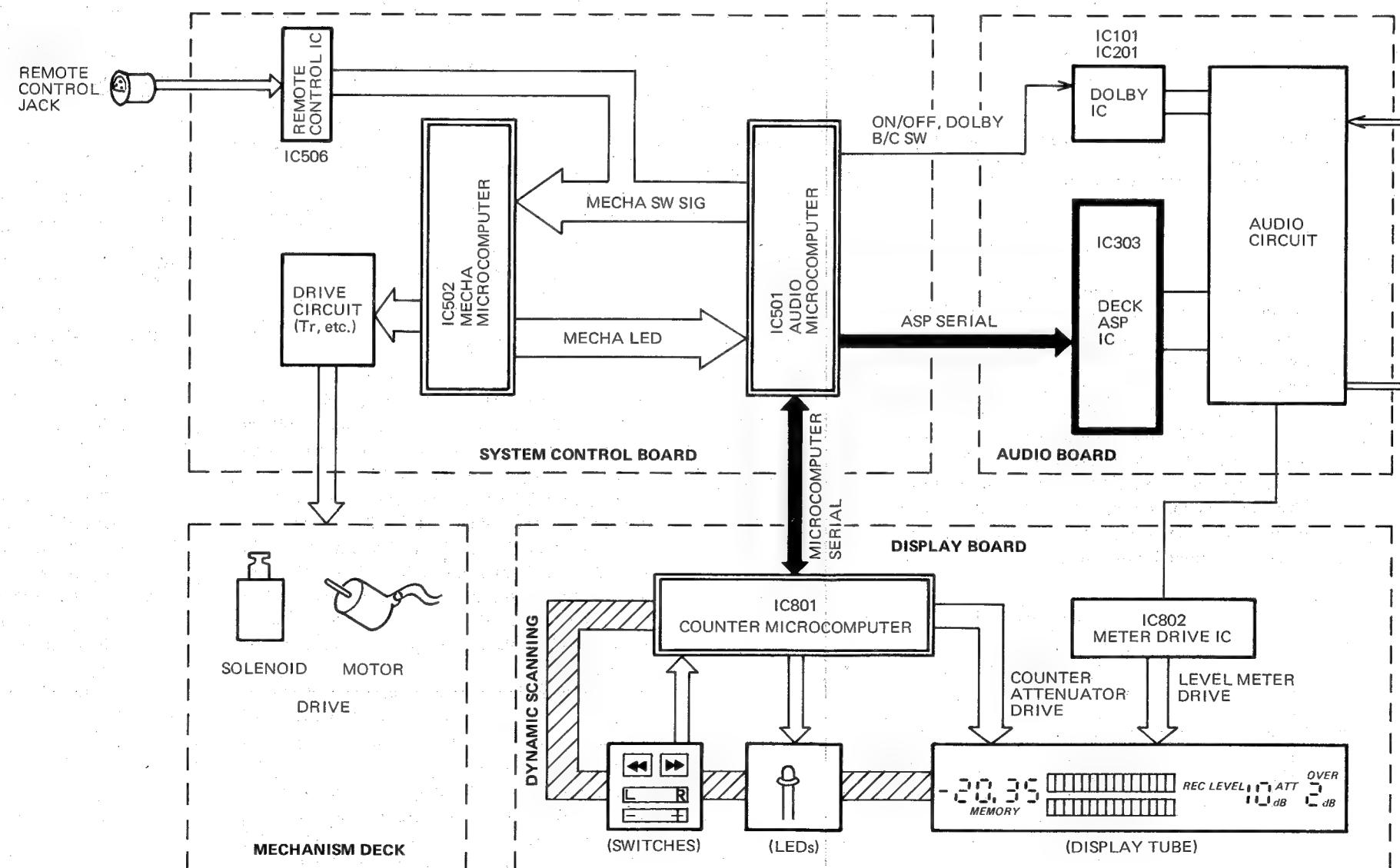
- IC501 (audio microcomputer):  
ASP control, Level A/D control, memory back-up, etc.
- IC502 (mechanical microcomputer):  
mechanical control, AMS, (quick reverse), etc.
- IC801 (counter microcomputer):  
Linear counter, switch input, dynamic scanning of display output, etc.

2. As the audio microcomputer is backed-up by lithium cell, the contents (information) of the audio memory and the value of the linear counter are not erased. Normally, reset signal is not applied to the audio microcomputer (IC501 ③③ is connected to cell). Either normal operation or back-up mode is determined according to the level at the HOLD terminal of IC501 ③④ when the power is turned on or off.

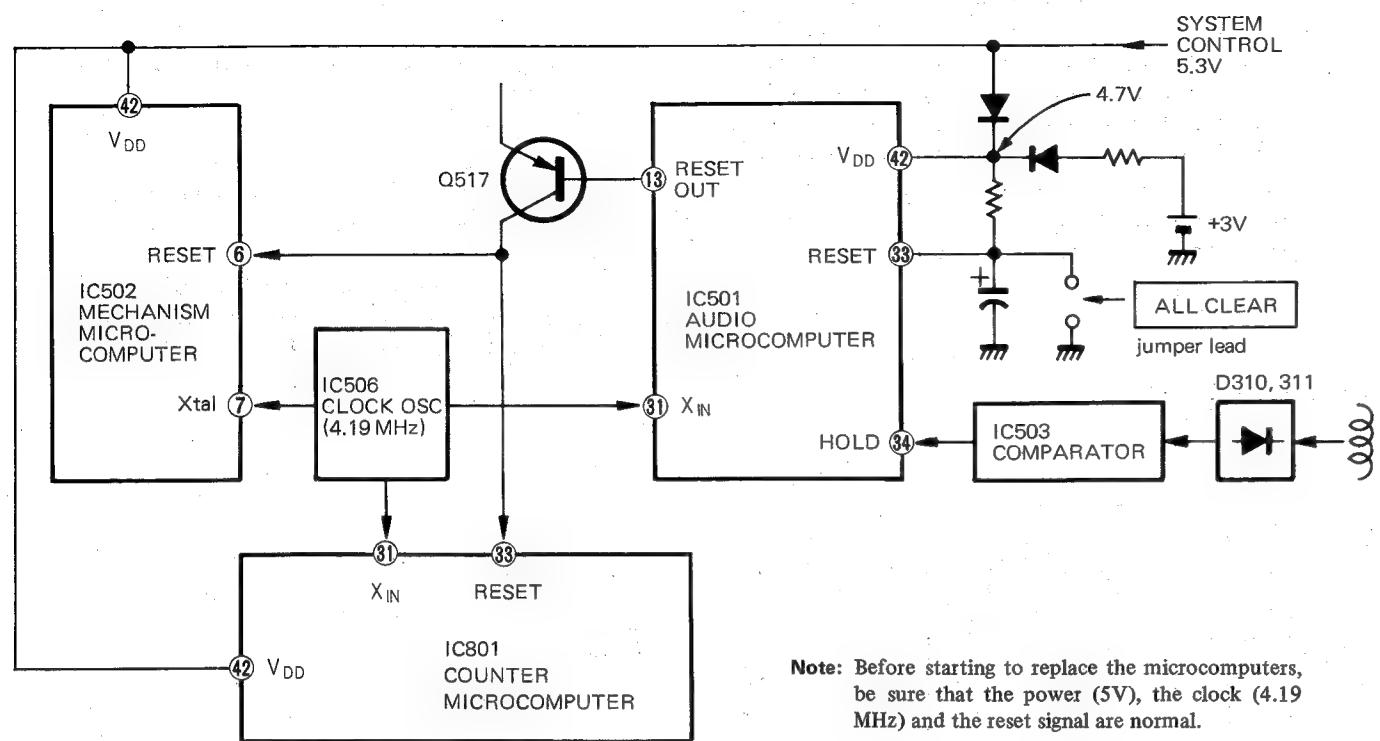


This trigger voltage is applied to IC501 ③④ from the power transformer via D310, D311 (rectifiers) and IC503 (comparator).

— Block Diagram for TC-FX707R Microcomputer System —

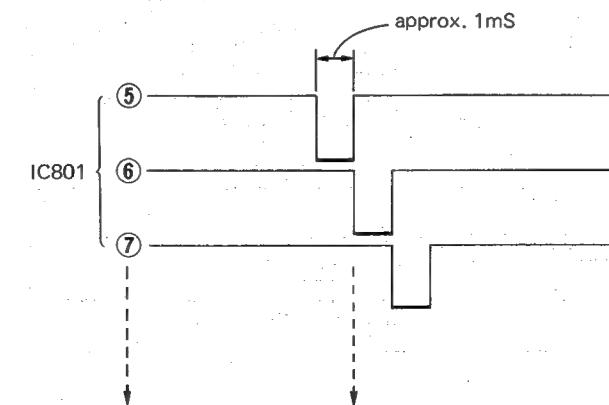


## — Simplified Circuit for Power and Reset Signal Among Three Microcomputers —

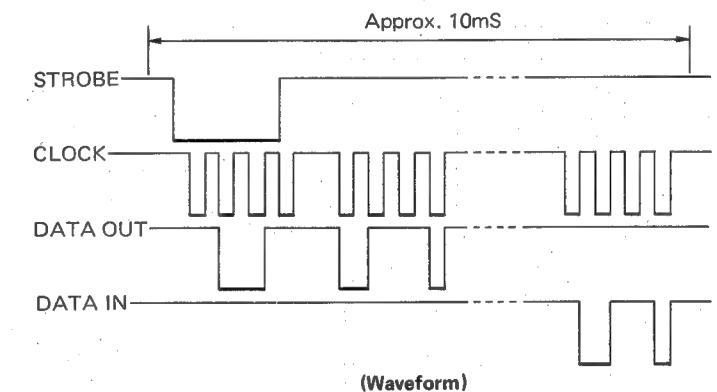
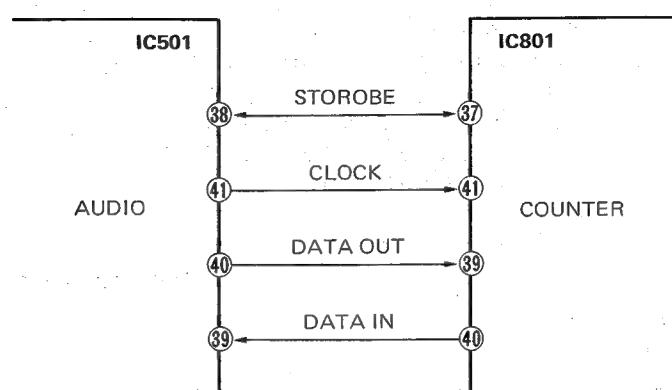


Note: Before starting to replace the microcomputers, be sure that the power (5V), the clock (4.19 MHz) and the reset signal are normal.

3. IC501 is started to activate to normal operation. The level at the reset terminal ⑬ of IC501 drops to 0V from 5V (5V → 0V). The RESET OUT signal at IC501 ⑬ is inverted by Q517 and applied to IC502 ⑥ and IC801 ⑬ (0V → 5V). Then, the muting for FL tube power is released and all the circuit is initialized. If this signal is not normal, the unit will not operate (The light in the cassette compartment may go on). Accordingly, the defective section will be found by tracing this signal.



5. The switch input signal and the display output signal are transferred between IC501 and IC801 by the serial data signal manner. This outputs the data according to the clock of 4 cycles and 17 pairs when the switch is pushed or released, the LED is turned on, the input or the output condition is changed and so on (See figure below).

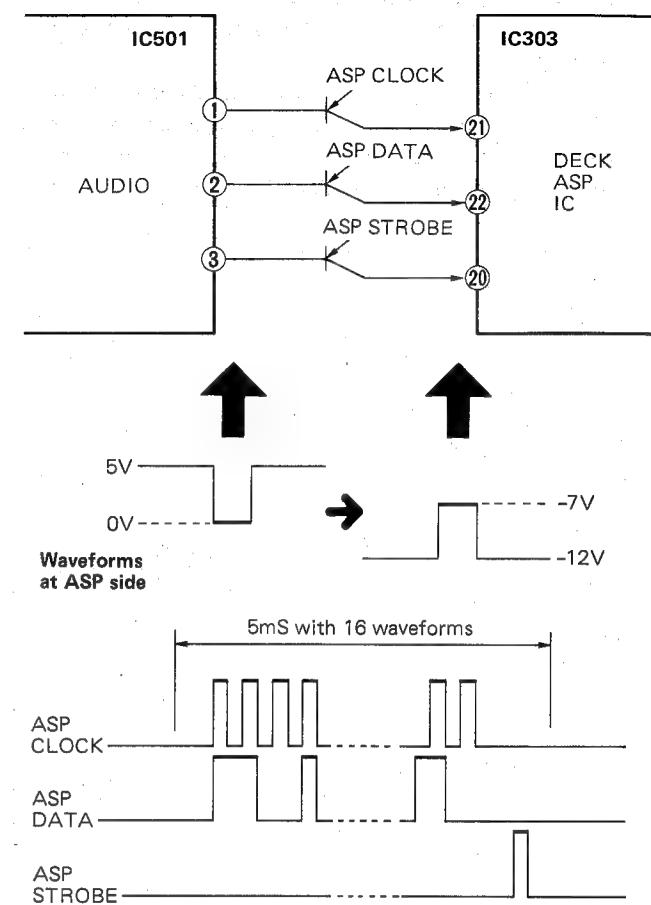


(Waveform)

6. The switch inputs (for example; ▶, ▷, ▲, △ switches) and the display outputs (for example; ●, □ lamps) of IC502 are transferred in serial operation and connected to the controls on the front panel via the IC501, which executes serial-parallel conversion. Accordingly, if IC501 or the serial data bus is defective, the mechanism deck will not operate. As mentioned in the block diagram, the remote-control input is directly connected to IC502 via IC506. Therefore, if the mechanism is operated by using the remote control, IC502 is normal.

7. The configuration of this audio circuit is almost the same as that of common one. The difference between them is that the mechanical level controls and the switches are integrated in the ASP IC (IC303) as a semiconductor switch. The bias current switching depending on tape type is made by variable dc output from IC303 ⑯. IC303 is controlled by the ASP serial data from IC501. The ASP data are outputted when the

audio condition is changed (for example, when the record level or the tape type is changed) as shown below. The ASP signal is phase-inverted and level-shifted by Q514-Q516.



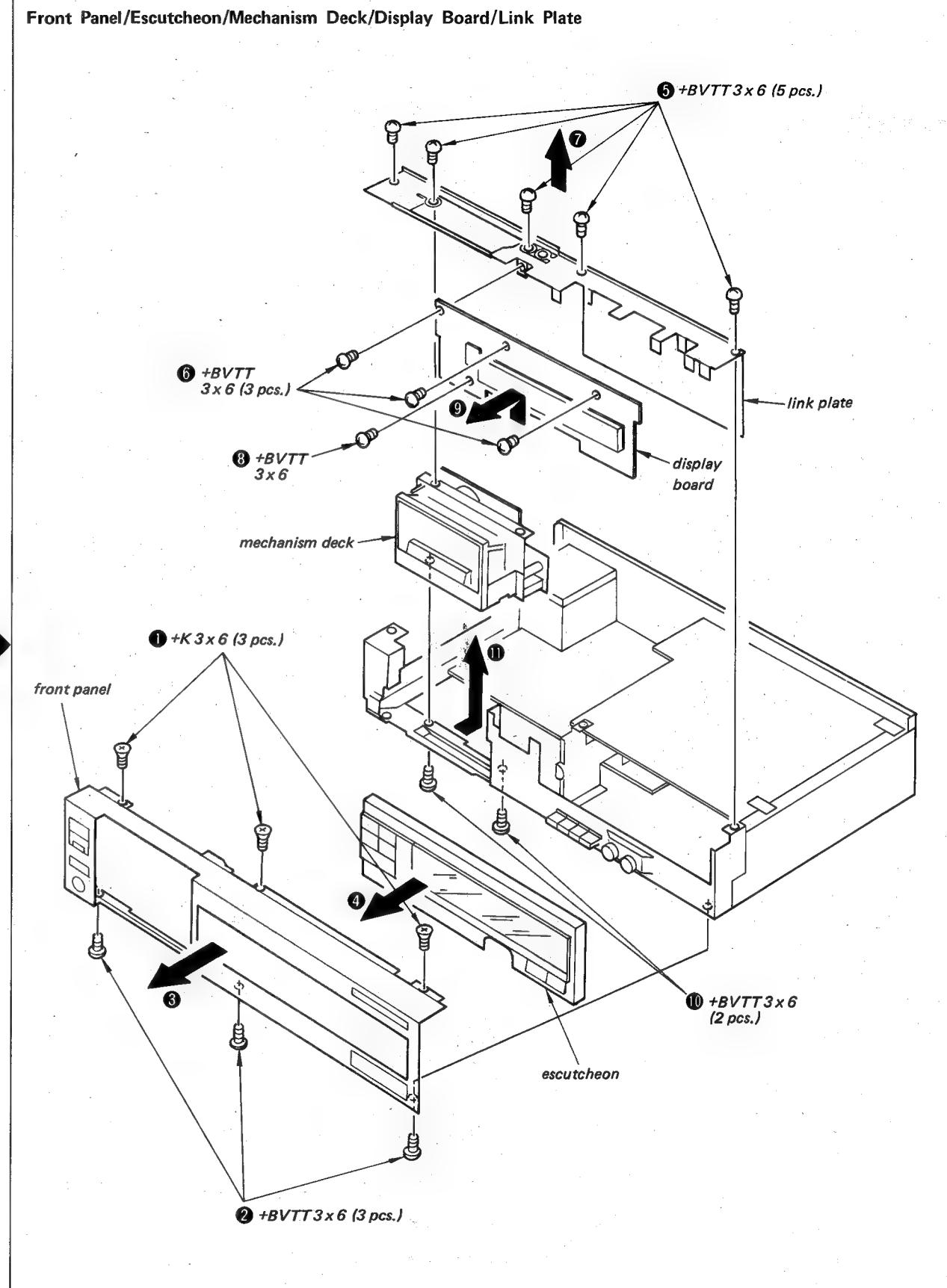
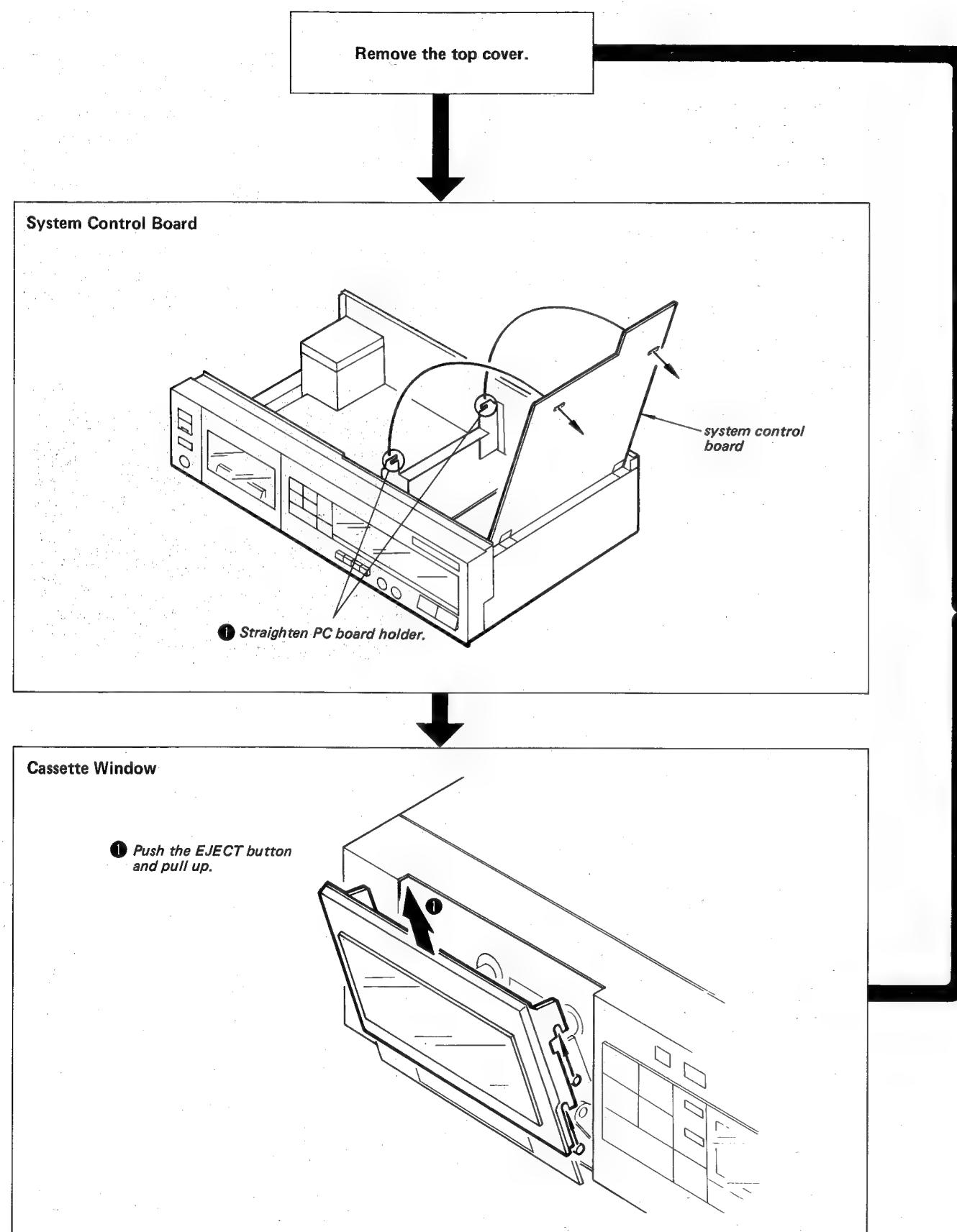
8. The recording level detection A/D converter circuit for the digital level monitor and the automatic attenuator function is controlled by IC501. The recording signal passed in the A/D amplifier (IC501) is rectified, sampled by IC504 to L-CH and R-CH, and charged in C513. It is discharged by IC514.

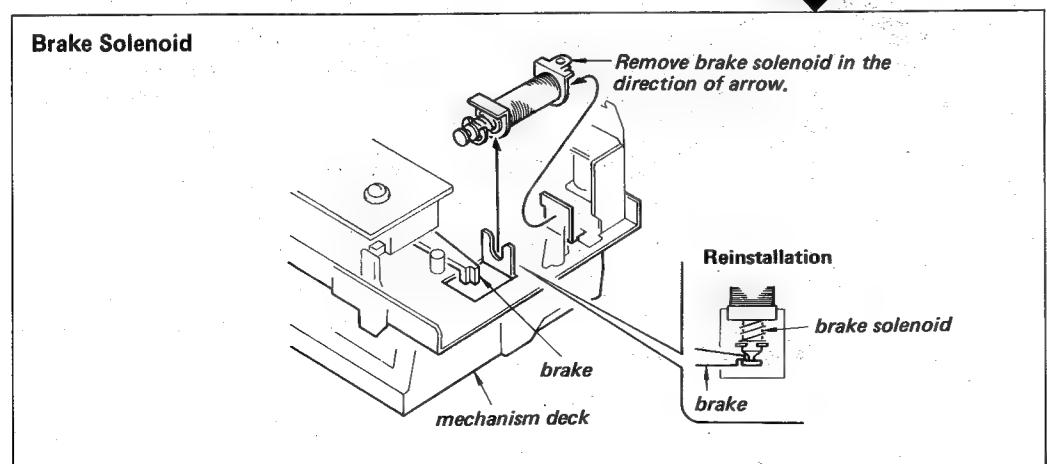
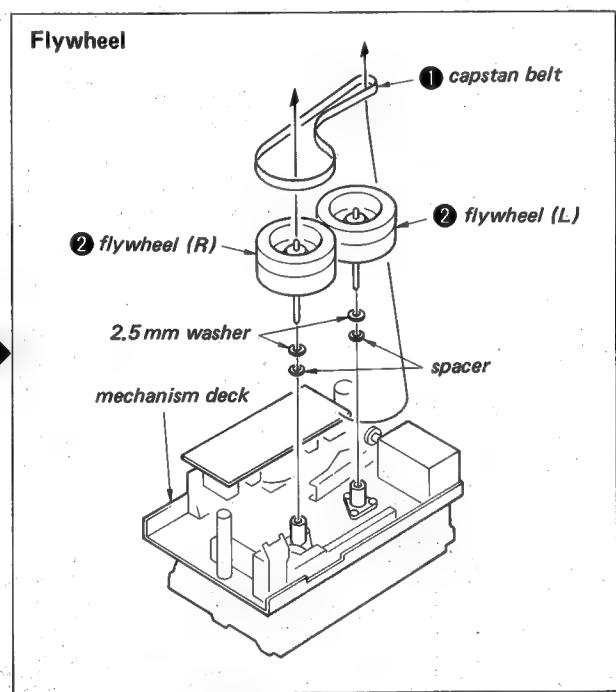
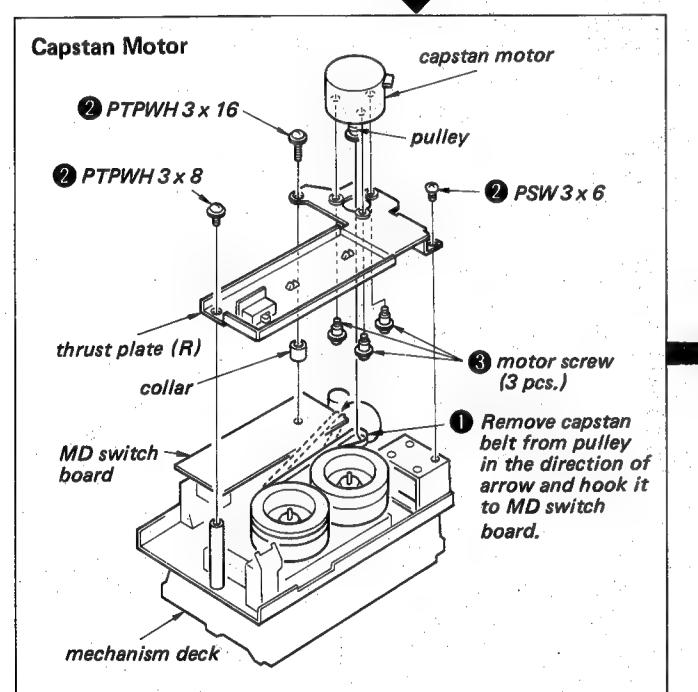
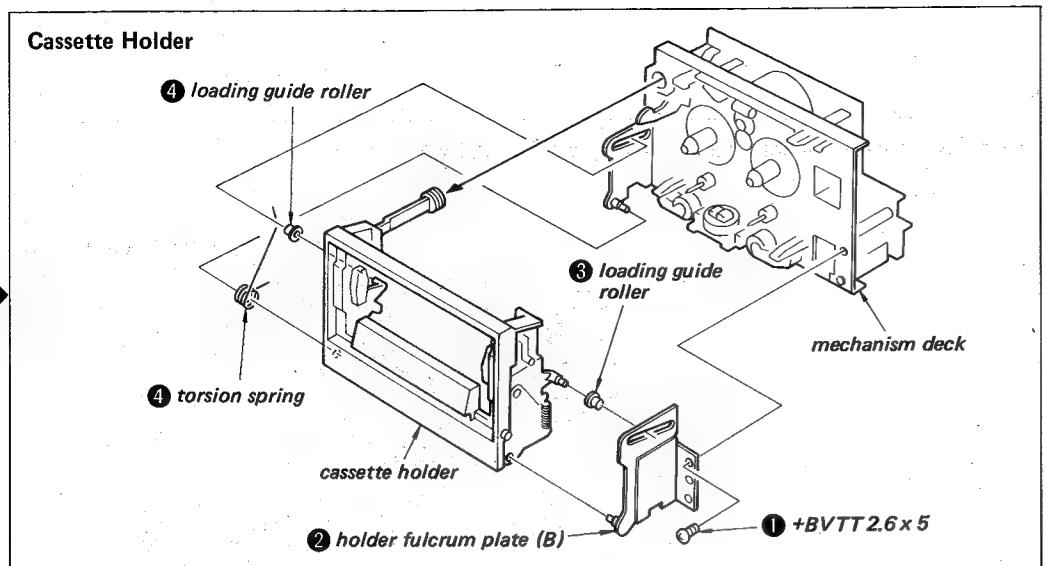
9. After replacing the microcomputers or cell, be sure to initialize the microcomputers by applying the reset signal. This can be performed by shorting the "ALL CLEAR" jumper wire near the cell on the system control board with a screwdriver.

SECTION 2  
DISASSEMBLY

TC-FX707R TC-FX707R

- Follow the disassembly procedure in the numerical order given.





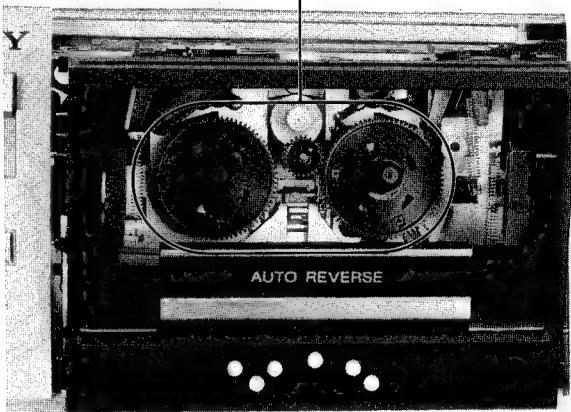
## 3-1. MECHANICAL ADJUSTMENTS

## PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:  
record/playback head      pinch roller  
erase head      rubber belts  
capstan      idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

| Torque           | Torque Meter | Meter Reading                           |
|------------------|--------------|-----------------------------------------|
| FWD              | CQ102C       | 30 – 60 g·cm<br>(0.42 – 0.83 oz·inch)   |
| FWD back tension | CQ102C       | 3.5 – 5.5 g·cm<br>(0.04 – 0.09 oz·inch) |
| REV              | CQ102RB      | 30 – 60 g·cm<br>(0.42 – 0.83 oz·inch)   |
| REV back tension | CQ102RB      | 3.5 – 5.5 g·cm<br>(0.04 – 0.09 oz·inch) |
| FF·REW           | CQ201B       | 110 – 175 g·cm<br>(1.52 – 2.42 oz·inch) |

back tension



### Precaution on Repairing

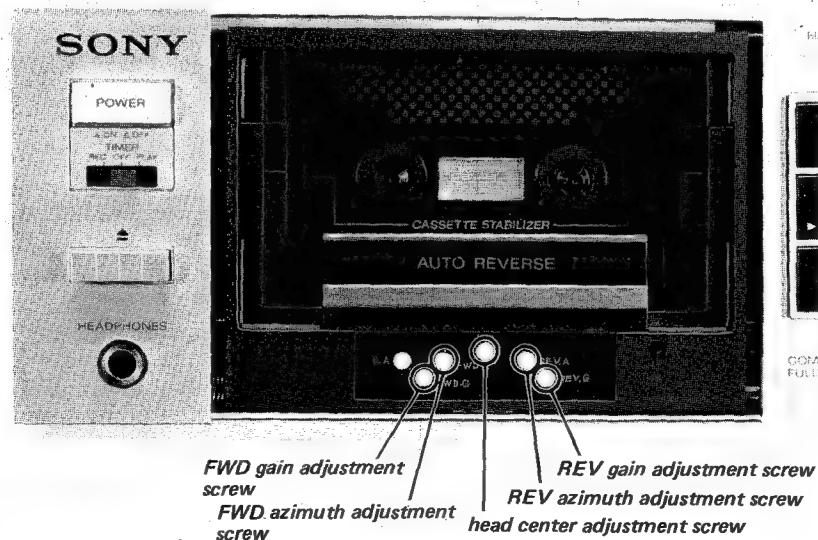
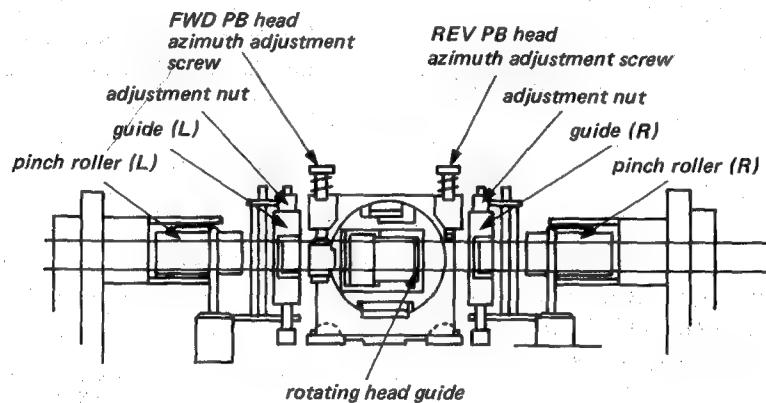
As the head center adjustment and the tape pass adjustment are affected each other, do not perform them at the same time.

### Head Center Adjustment

1. Insert a mirror tape cassette.
2. Place the unit in play mode.
3. When the lower part of the tape is warped, loose the head center adjustment screw. Reversely, the upper part of the tape is warped, secure the adjustment screw.
4. Confirm the tape warp for both in the forward and reverse directions.

### Tape Pass Adjustment

1. Clean the pinch roller and the record/playback head with soft cloth moistened with alcohol.
2. Play a test tape WS-48.
3. Adjust the FWD gain adjustment screw in the forward mode and the REV gain adjustment screw in the reverse mode so that the VTVM reads the maximum, and lissajous figure is in 30° angle reading on the oscilloscope across the LINE OUT.
4. Play a mirror tape cassette in the forward mode.
5. Confirm the there is no tape curl near the guide of the head and the tape quide L. If there is tape curl, adjust the guide L. The turning amount of the guide L should be within 3/4 turns.



## 3-2. ELECTRICAL ADJUSTMENTS

**Note:** The adjustment should be performed in the order given in this service manual.  
The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE SELECT switch according to the tape as follows.

| Tape  | TAPE SELECT switch    | LED display          |
|-------|-----------------------|----------------------|
| CS-15 | AUTO                  | I: NORM              |
| CS-26 | AUTO                  | II: CrO <sub>2</sub> |
| CS-30 | Fe-Cr (METAL)         | III: Fe-Cr           |
| CS-40 | AUTO<br>Fe-Cr (METAL) | IV: METAL            |

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR ..... OFF  
 TAPE ..... TYPE I  
 TIMER ..... OFF  
 REC BALANCE ..... C<sub>ab</sub><sup>ATT</sup> (CENTER)  
 LINEOUT/PHONE  
 LEVEL ..... C<sub>ab</sub><sup>ATT</sup> (MAX)  
 AUTO ATT ..... OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

## Standard Input Level

|                  | MIC              | LINE IN         |
|------------------|------------------|-----------------|
| source impedance | 300Ω             | 10kΩ            |
| input level      | 0.77 mV (-60 dB) | 0.25 V (-10 dB) |

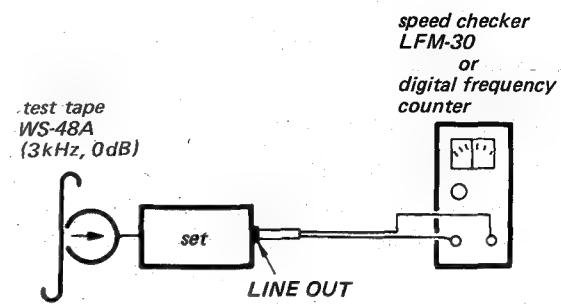
## Standard output Level

|                | HEADPHONES     | LINE OUT        |
|----------------|----------------|-----------------|
| load impedance | 8Ω             | 47kΩ            |
| output level   | 31 mV (-26 dB) | 0.435 V (-5 dB) |

## Tape Speed Adjustment

## Procedure:

Mode: forward playback



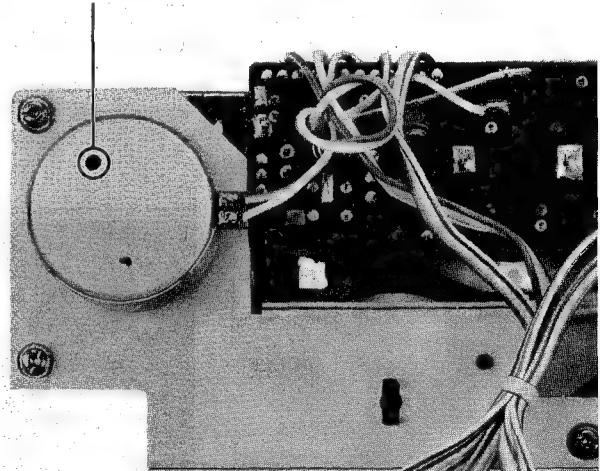
## Specification:

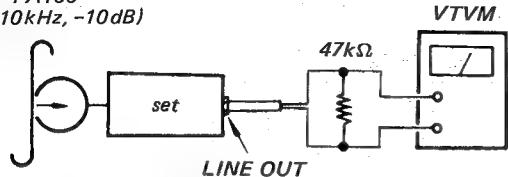
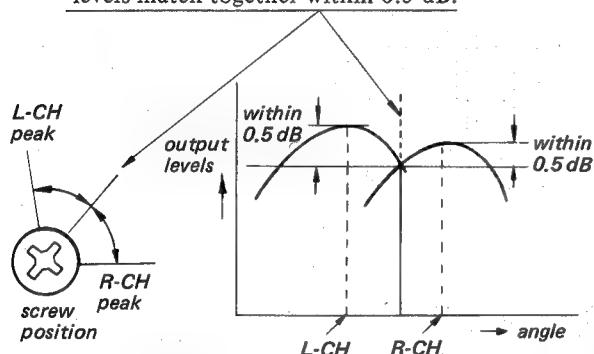
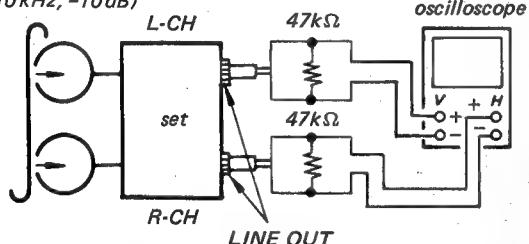
| Speed checker  | Digital frequency counter |
|----------------|---------------------------|
| -0.66 ~ -0.33% | 2,980 ~ 2,990 Hz          |

Frequency difference between the beginning and the end of the tape should be within 0.84% (25 Hz).

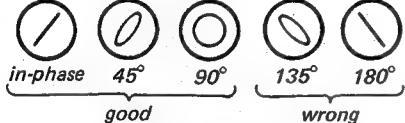
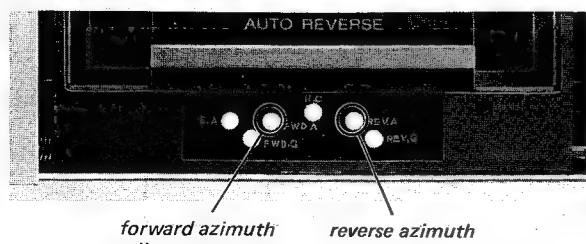
## Adjustment Location:

Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.

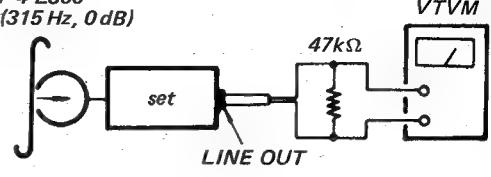


**Record/playback Head Azimuth Adjustment****Note:** (Perform for both in forward and reverse directions.)**Procedure:**1. Mode: playbacktest tape  
P-4-A100  
(10kHz, -10dB)2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.3. Phase Check  
Mode: playbacktest tape  
P-4-A100  
(10kHz, -10dB)

## Screen pattern

**Adjustment Location:****Playback Level Adjustment****Procedure:**

Mode: playback

test tape  
P-4-L300  
(315 Hz, 0dB)**Specification:**LINE OUT level: 0.41 – 0.46 V  
(-5.5 – -4.5 dB)

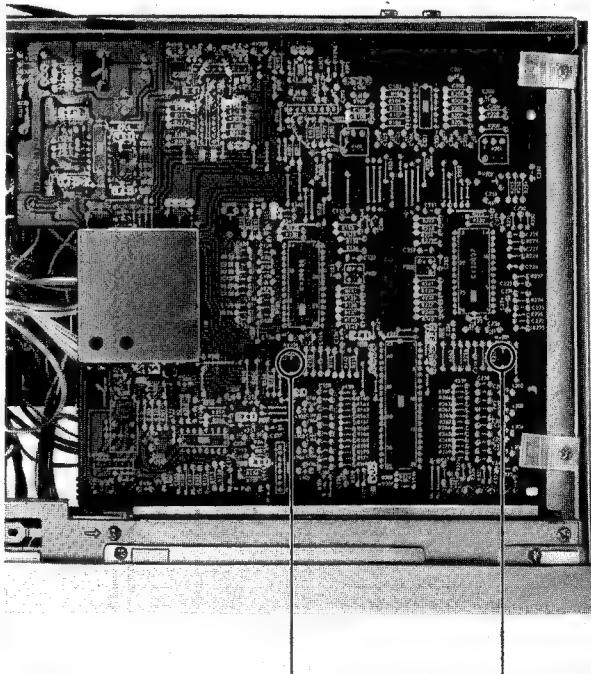
Level difference between channels:

less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location:**

— audio board —

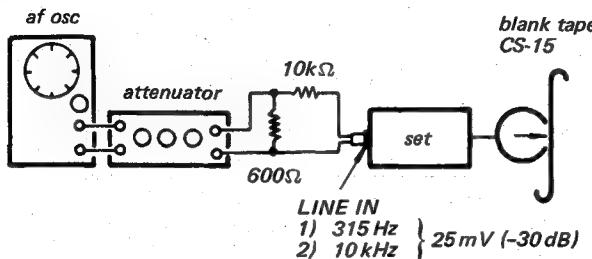


**Record Bias Adjustment****Setting:**

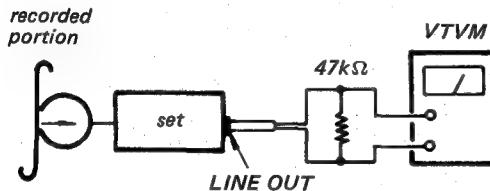
REC LEVEL control: standard record  
(See page 28)

**Procedure:**

1. Mode: record



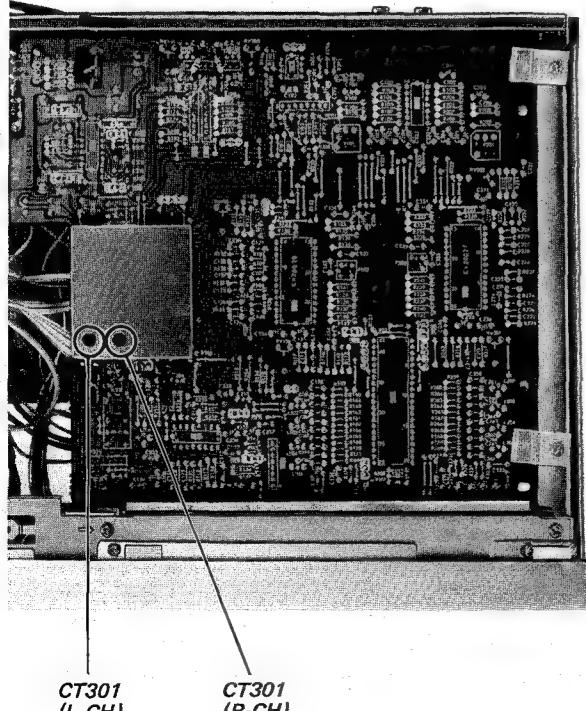
2. Mode: playback



Adjust CT301 so that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.

**Adjustment Location:**

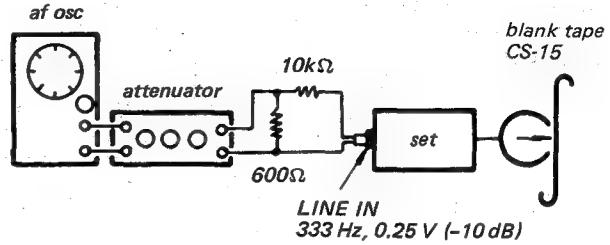
— *audio board* —

**Record Level Adjustment****Setting:**

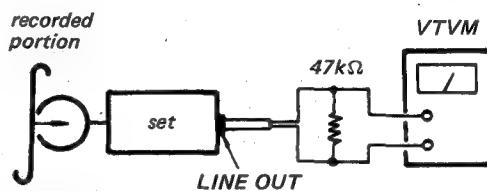
REC LEVEL control: standard record  
(See page 28)

**Procedure:**

1. Mode: record



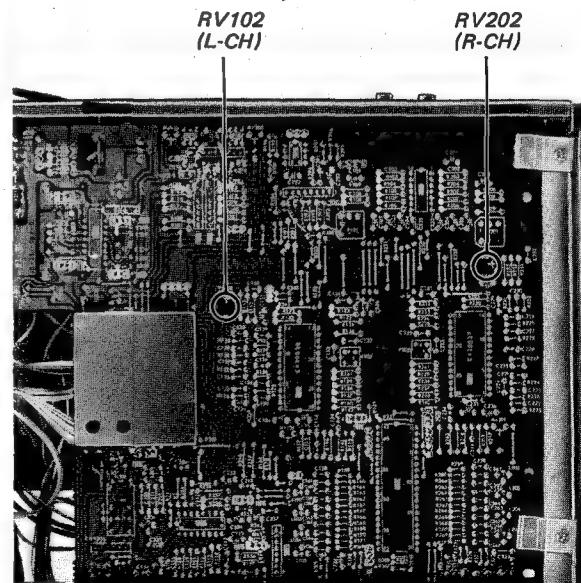
2. Mode: playback

**Specification:**

LINE OUT level: CS-15; 0.41 – 0.46 V  
(-5.5 – -4.5 dB)  
CS-26; 0.39 – 0.49 V  
CS-30; 0.39 – 0.49 V  
CS-42; (-6 – -4 dB)

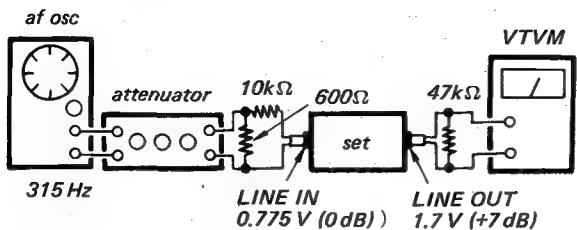
**Adjustment Location:**

— *audio board* —



**Level Meter Calibration****Procedure:**

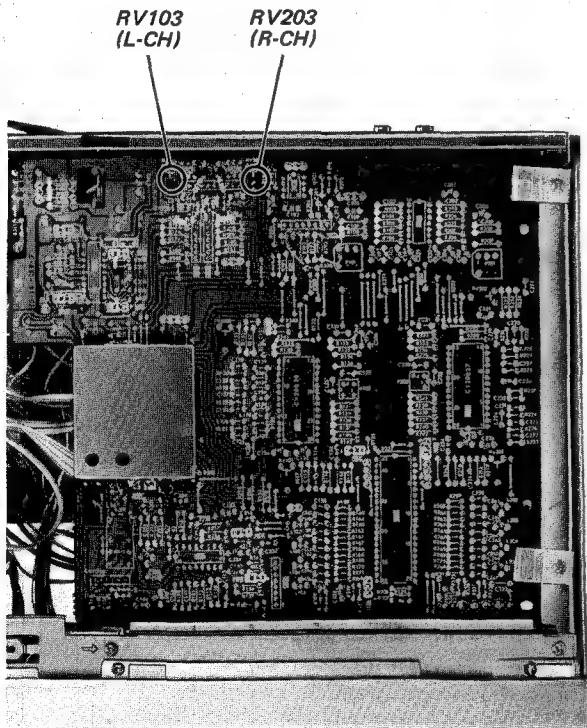
1. Mode: record



2. Set the REC LEVEL control so that the LINE OUT level is 1.7 V (+7 dB).
3. Adjust RV103 (L-CH) and RV203 (R-CH) so that all the segment of the LED meter go on.
4. Make sure that the LED meter indicates -4 dB (0 VU) when VTVM reads -5 dB (0.44 V).

**Adjustment Location:**

— *audio board* —

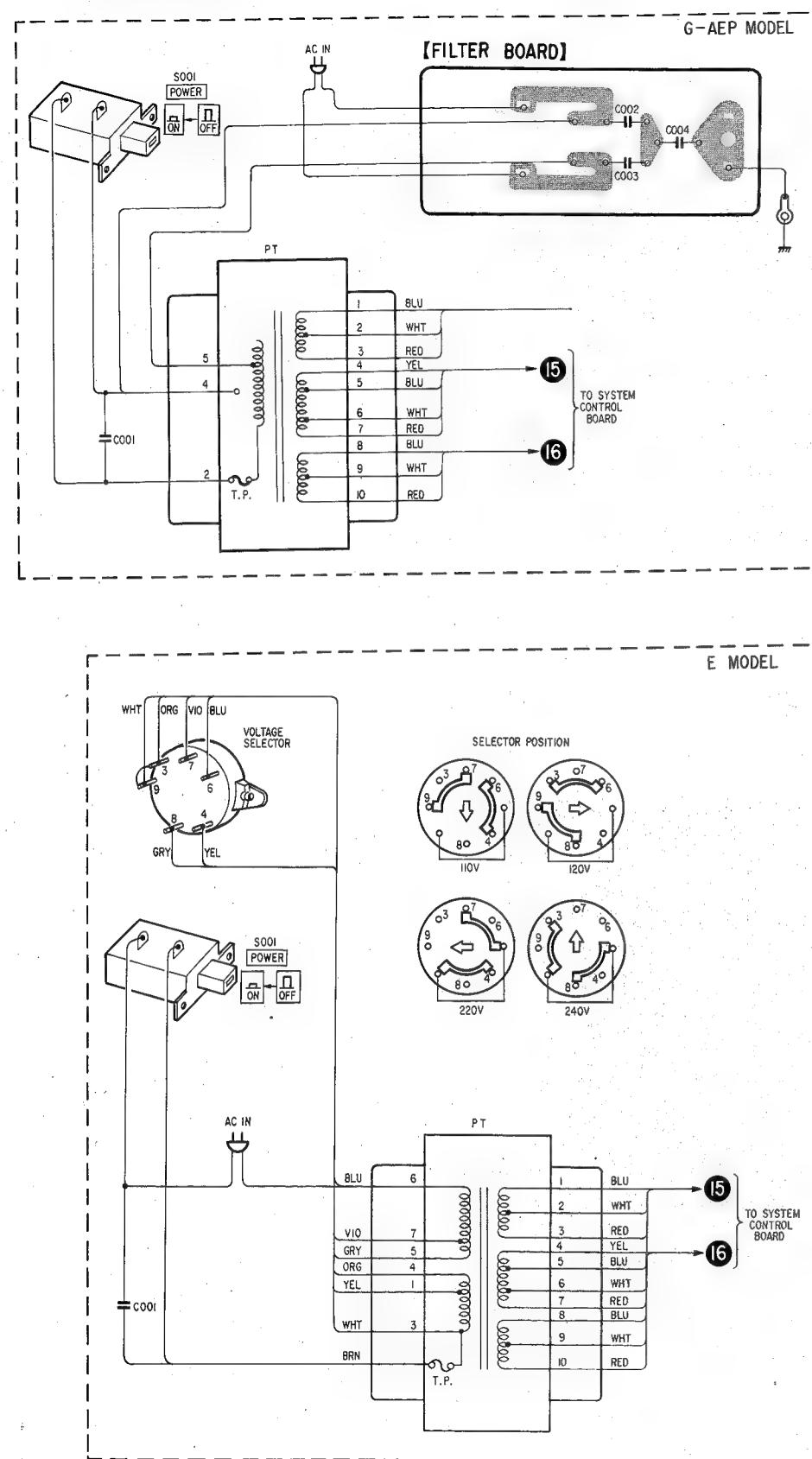


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

## 4.1. MOUNTING DIAGRAM

- Audio Section -

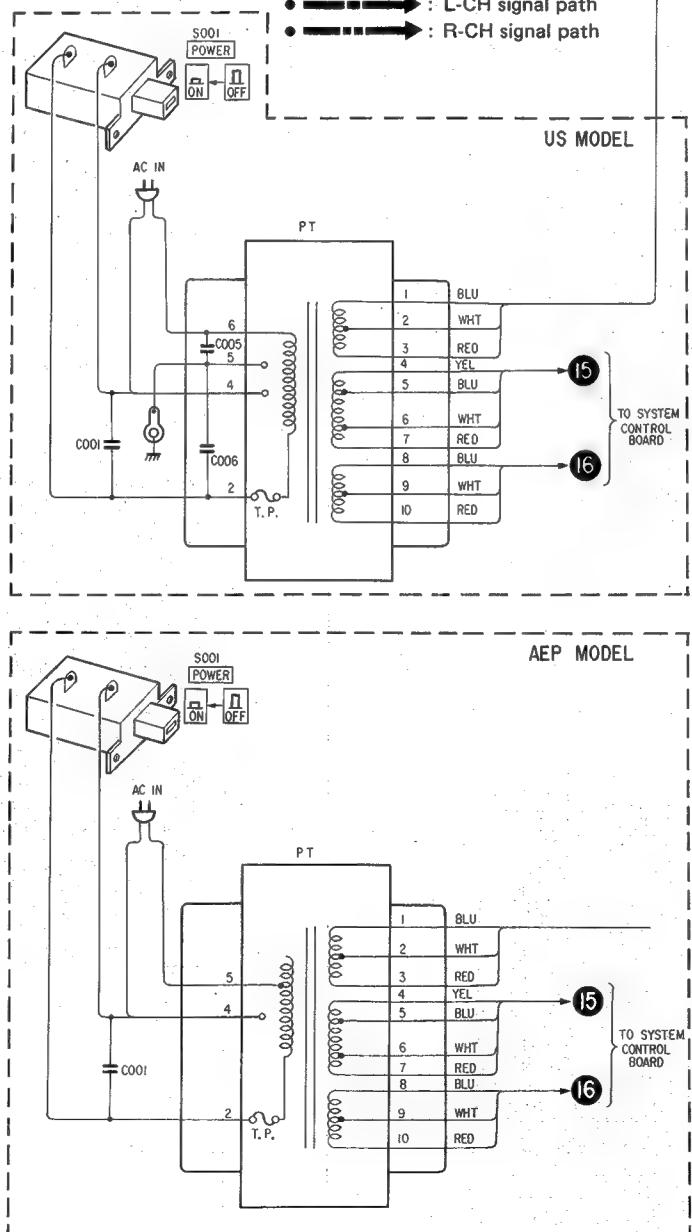
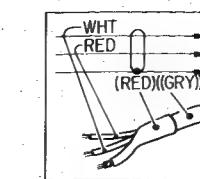
• See page 39 for Semiconductor Lead Layouts.



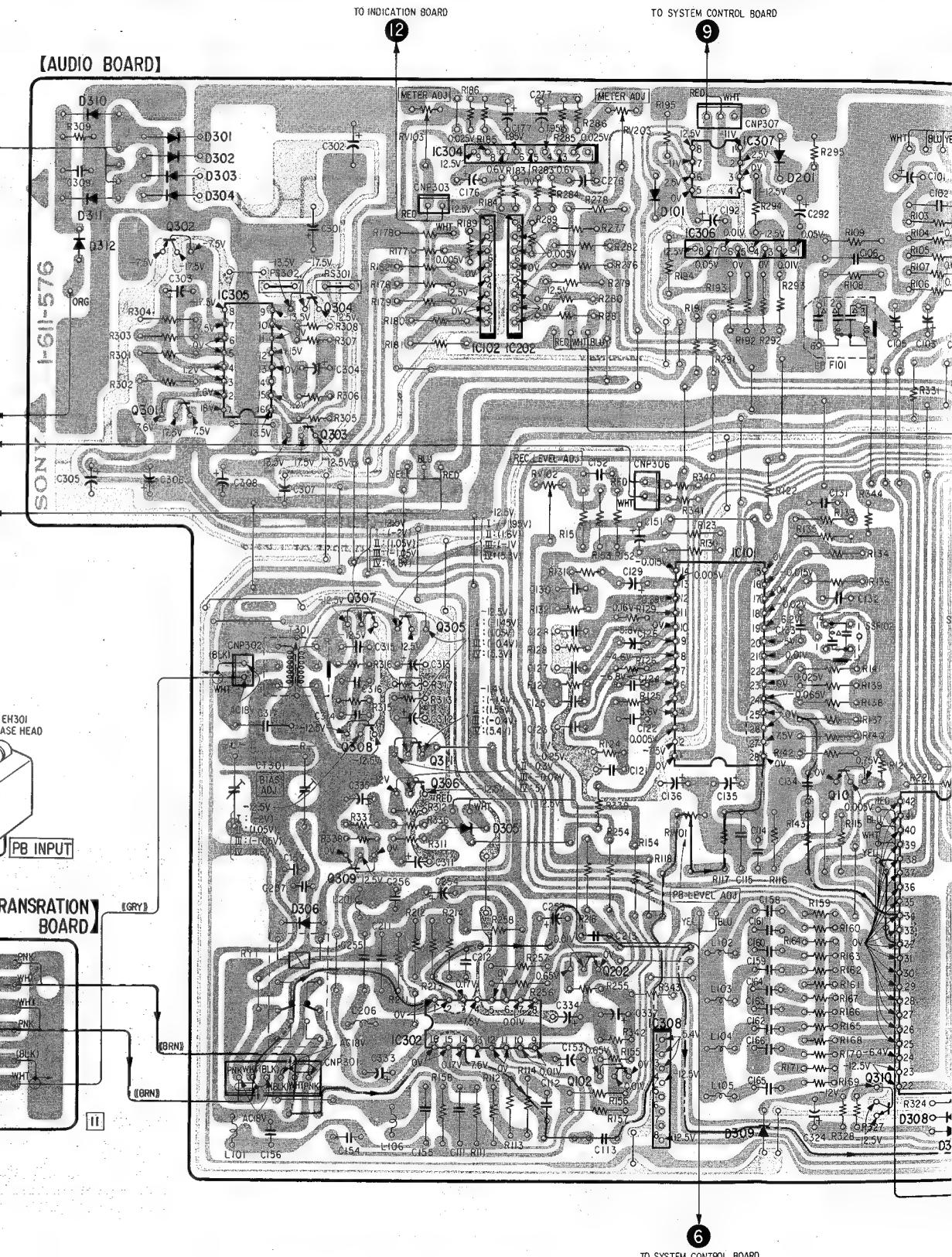
## Note:

• Color code of sleeving over the end of the jacket.

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : indicates side identified with part number.
- ▲ : nonflammable resistor.
- (F) : fusible resistor.
- : B + pattern
- : B - pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

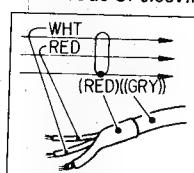


|    |          |          |          |     |     |              |       |
|----|----------|----------|----------|-----|-----|--------------|-------|
| Q  | 302      | IC305    | 304      | 307 | 305 | IC304        | IC307 |
| IC | 301      | 303      | 308      | 311 | 306 | IC102, IC202 | IC306 |
| D  | 310, 312 | 301, 303 | 309, 304 | 306 | 305 | 202, 102     | IC101 |
|    | 311      | 302, 304 |          |     |     | 101          | 310   |



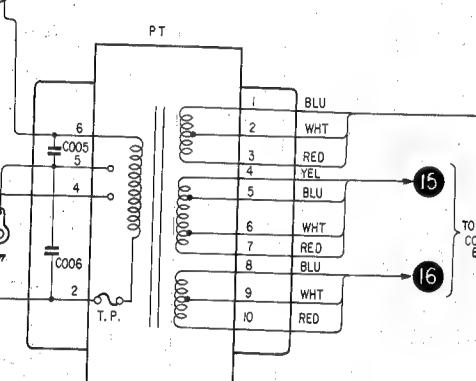
## Note:

- Color code of sleeving over the end of the jacket.

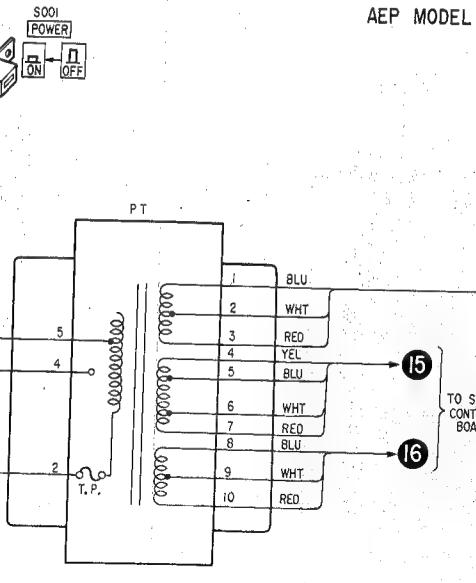


- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : indicates side identified with part number.
- ▲ : nonflammable resistor.
- (F) : fusible resistor.
- : B + pattern
- : B - pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

US MODEL



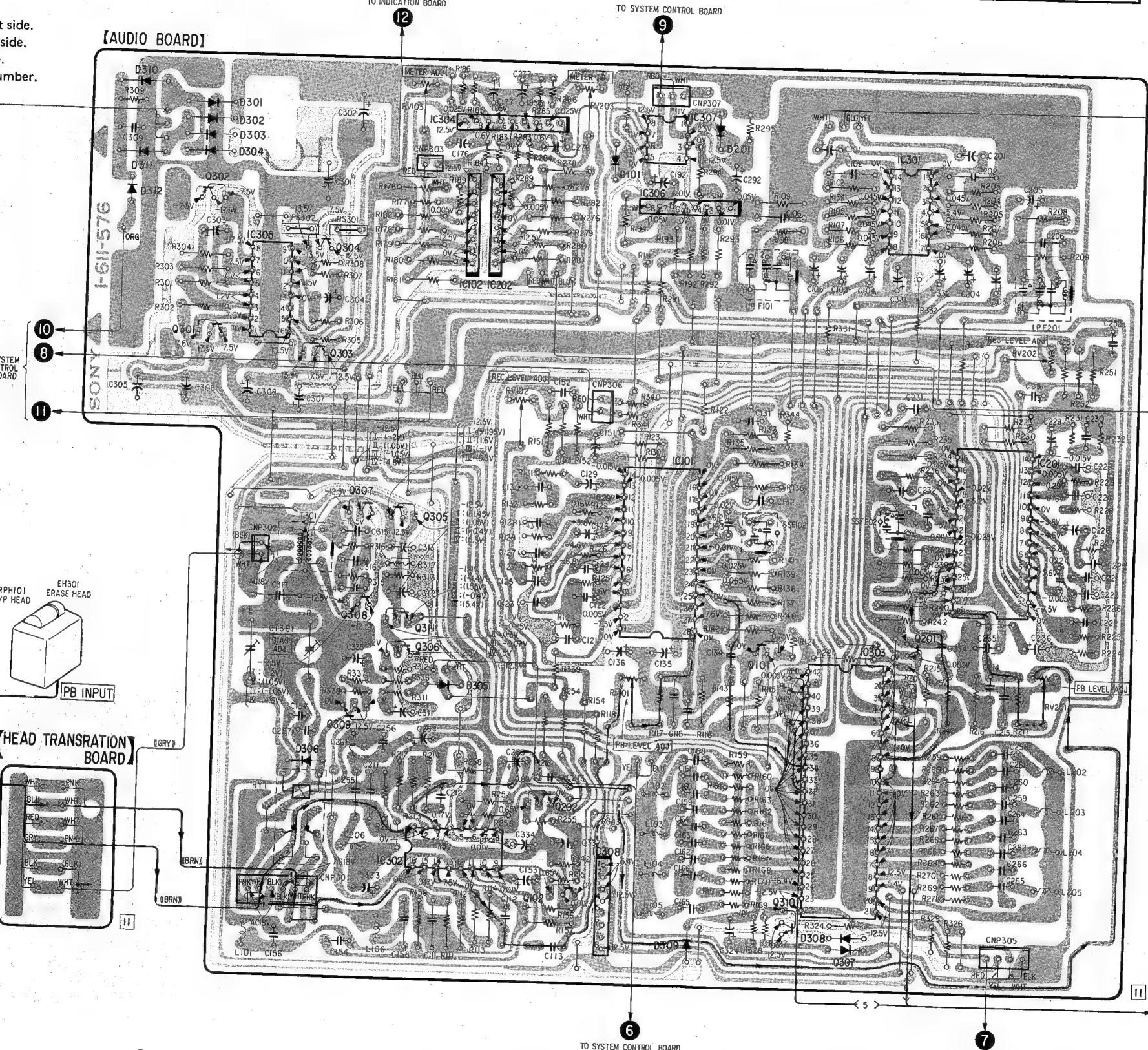
AEP MODEL



TO INDICATION BOARD 12

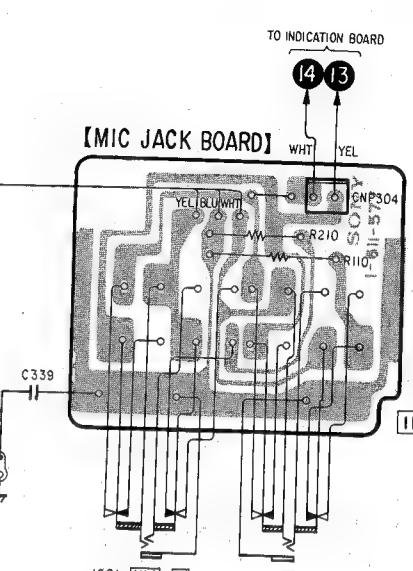
TO SYSTEM CONTROL BOARD 9

**[AUDIO BOARD]**

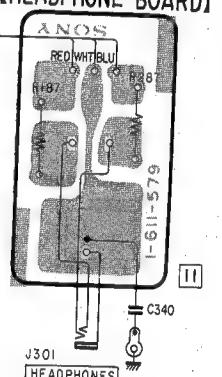


TO INDICATION BOARD 14, 13

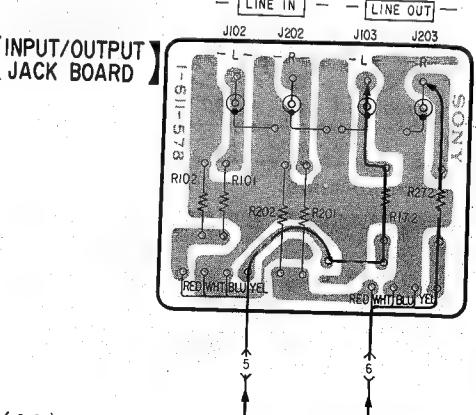
**[MIC JACK BOARD]**



**[HEADPHONE BOARD]**

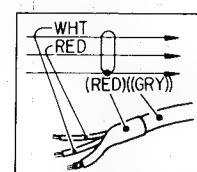


**[INPUT/OUTPUT JACK BOARD]**

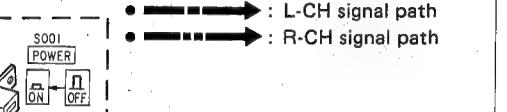


## Note:

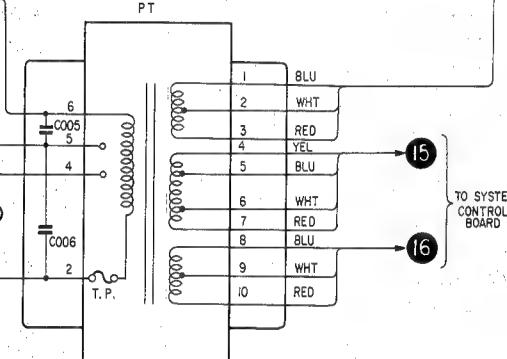
- Color code of sleeving over the end of the jacket.



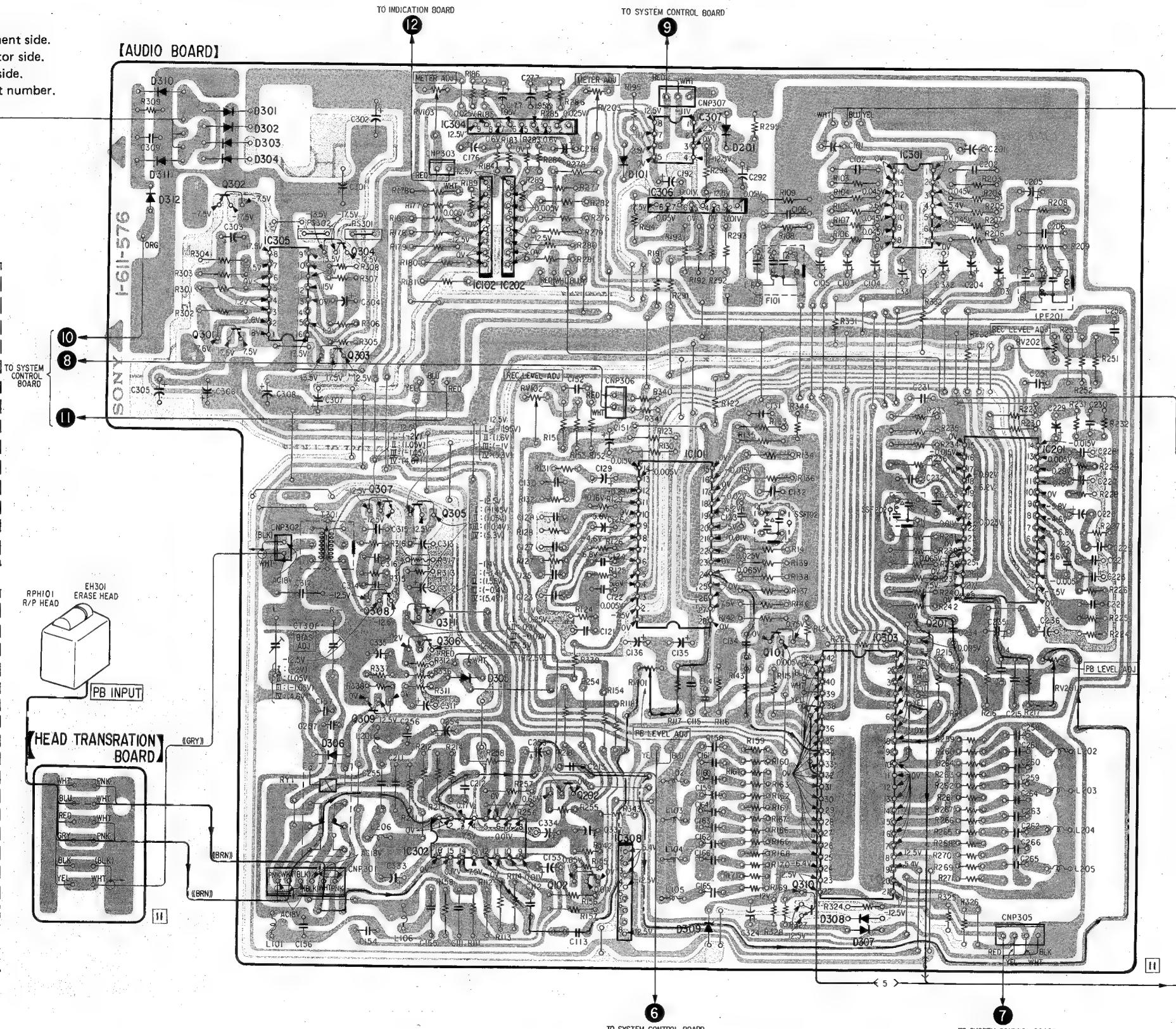
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : indicates side identified with part number.
- ▲ : nonflammable resistor.
- (F) : fusible resistor.
- : B + pattern
- : B - pattern
- : signal path
- : L-CH signal path
- : R-CH signal path



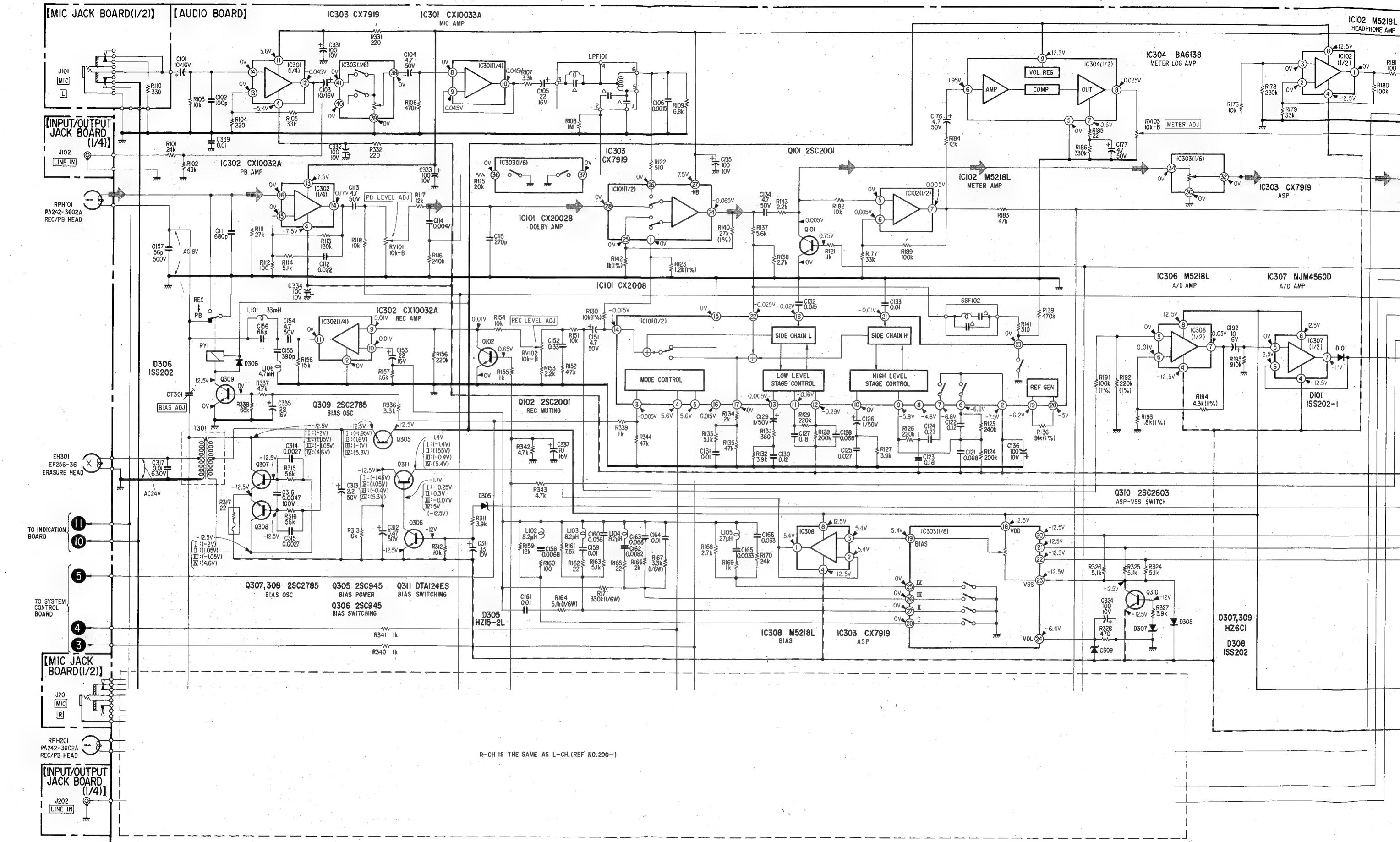
US MODEL



AEP MODEL



## 4-2. SCHEMATIC DIAGRAM — *Audio Section*





- Semiconductor Lead Layouts

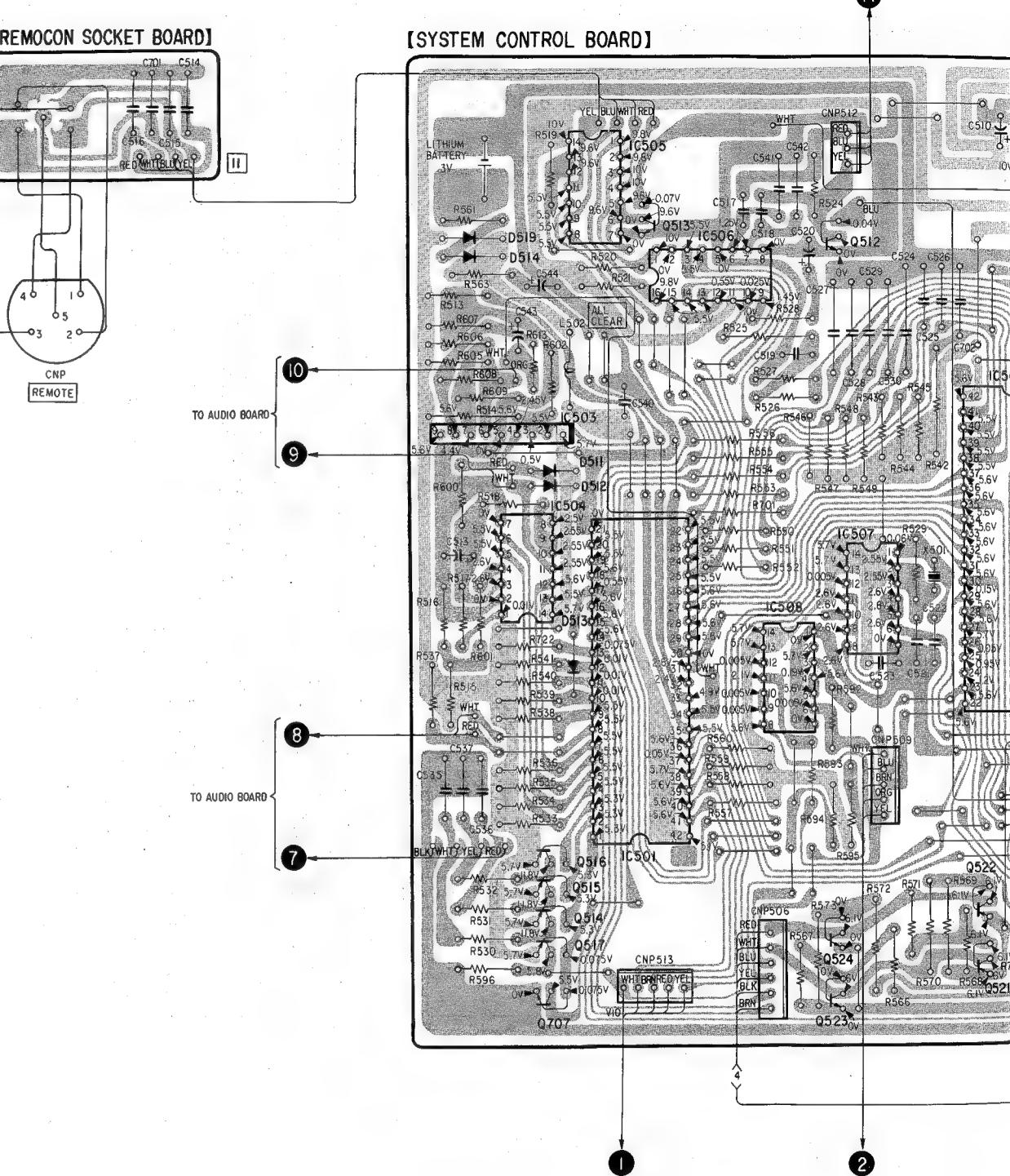
|                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                   |                                                                           |                                                      |                                            |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------|--------------------------|
| <b>10E-2</b><br><b>1SS202-1</b><br><b>EQB01-08</b><br><b>HZ15-2L</b><br><b>HZ24-2L</b><br><b>HZ36-2L</b><br><b>HZ7A1L</b><br><b>HZ9B1L</b><br><b>HZ11B1L</b><br><b>HZ12B2L</b><br><b>HZ6C1L</b> | <b>CX10032A</b><br><b>CX10033A</b><br><b>CX10034</b><br><b>CX10035</b><br><b>CX20028</b><br><b>CX565-031</b><br><b>CX7919A</b><br><b>LB1200</b><br><b>LB1245</b><br><b>MSL9359RS</b><br><b>NJM4560D</b><br><b>TC4066BP</b><br><b>TC4069UBP</b><br><b>TC40H004P</b><br><b>TMP4720N-1008</b><br><b>TMP47C40P-6302</b> | <b>2SB740</b><br><br><br><b>2SA952</b><br><br><br><b>2SC2785</b><br><b>2SD1020</b><br><br><br><b>CX20027</b><br><br><br><b>2SD774</b><br><br><br> | <b>SLR34DC5</b><br><b>SLR34PC5</b><br><b>SLR34URC5</b><br><b>SLR34YC5</b> | <b>2SC2458</b><br><br><br><b>2SD1406</b><br><br><br> | <b>2SB731</b><br><b>2SD809</b><br><br><br> | <b>PH102</b><br><br><br> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------|--------------------------|

### 3. MOUNTING DIAGRAM

### **System Control Section —**

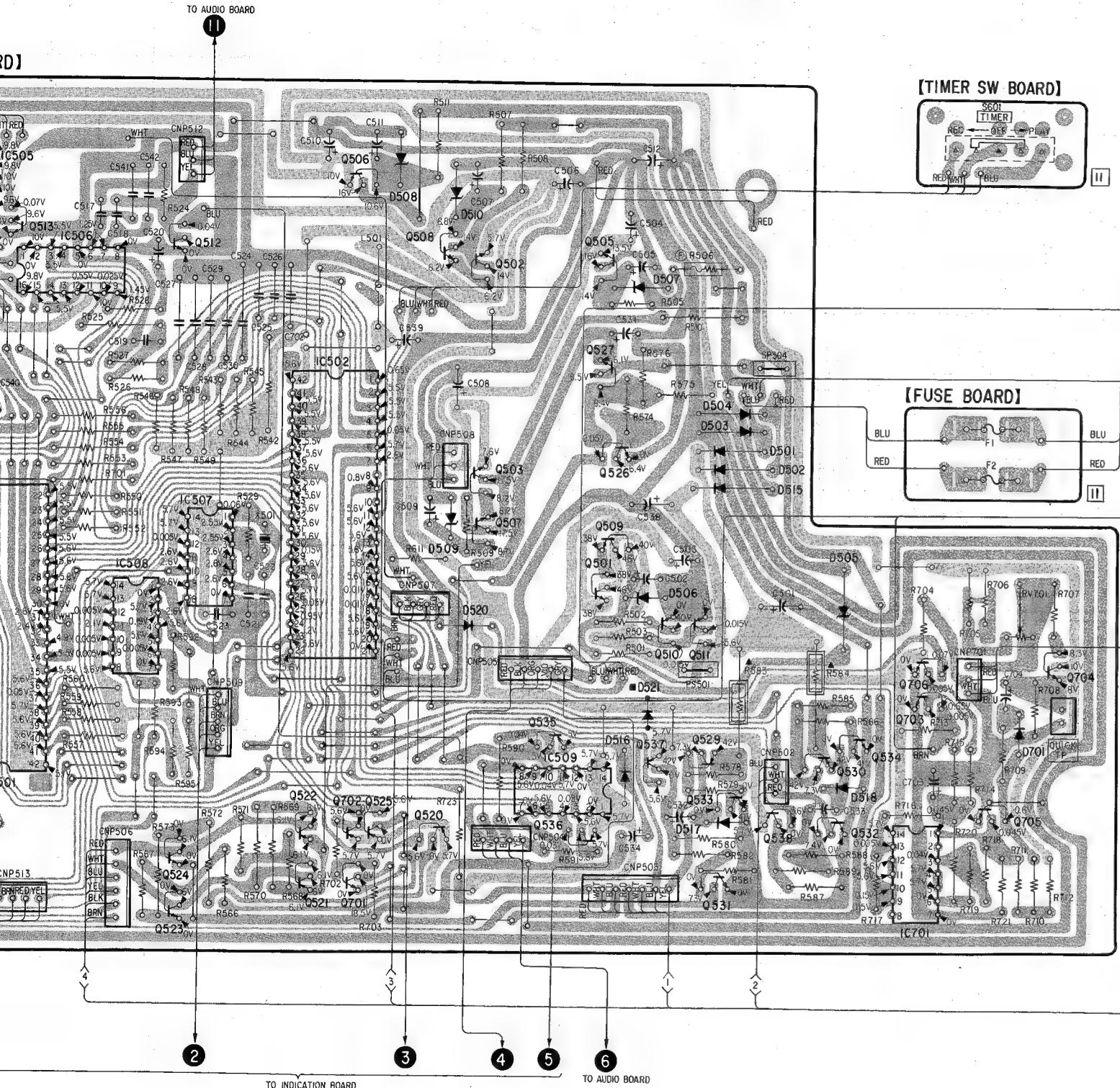
See page 39 for Semiconductor Lead Layouts.  
See page 33 for Note.

|                 |            |     |           |
|-----------------|------------|-----|-----------|
| 516, 517, IC505 | 512        |     |           |
| IC503, 515      | 513, IC506 | 524 | IC507     |
| IC504           | 514        | 523 | 522, IC50 |
| 707, IC501      | IC508      |     | 521       |
| 519             | 511        |     |           |
| 514             | 512        |     |           |
|                 | 513        |     |           |

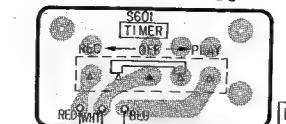


7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

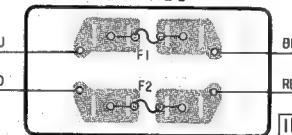
|            |     |       |                      |     |     |               |          |          |       |
|------------|-----|-------|----------------------|-----|-----|---------------|----------|----------|-------|
| 513, IC506 | 512 | 506   | 508                  | 502 | 503 | 505           | 527, 509 | 510, 511 | 706   |
| IC508      | 523 | IC507 | 522, IC502, 702, 525 | 521 | 701 | 535           | 526, 501 | 537      | 703   |
|            |     |       |                      | 520 | 507 | IC509, 536    | 529, 533 | 531      | IC701 |
|            |     |       |                      |     |     | 538, 530, 532 |          |          | 704   |
|            |     |       |                      |     |     |               | 506      | 504      | 505   |
|            |     |       |                      |     |     |               | 516, 521 | 503, 502 | 518   |
|            |     |       |                      |     |     |               | 517      | 501, 515 | 701   |



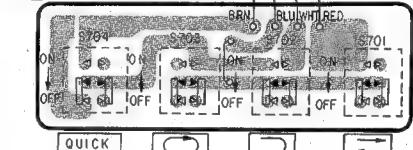
[TIMER SW BOARD]



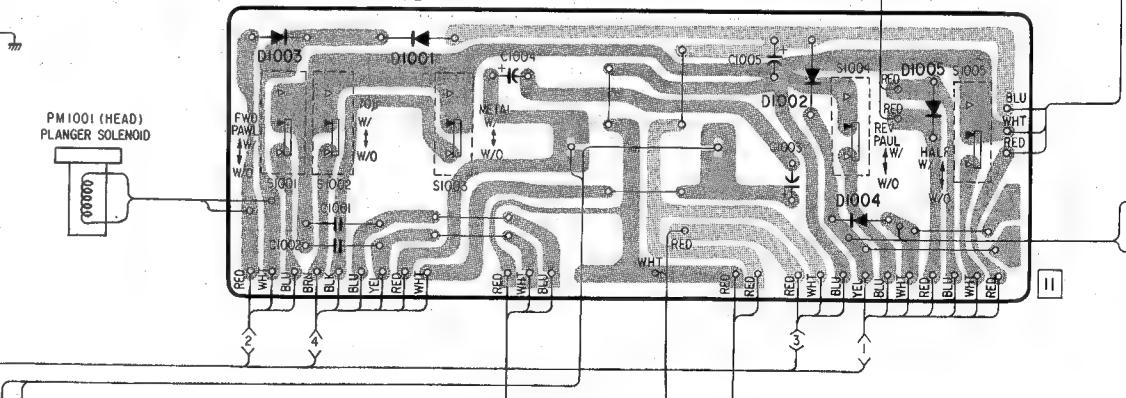
[FUSE BOARD]



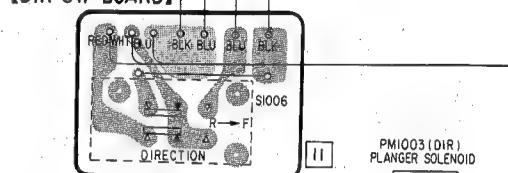
[DIRECTION (REW) MODE SW BOARD]



[MD SW BOARD]



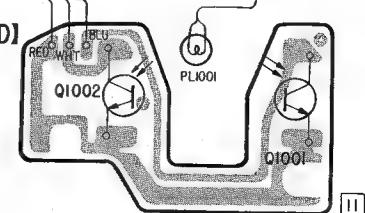
[DIR SW BOARD]



PM1003 (DIR)  
PLANGER SOLENOID

PM1002 (AMS)  
PLANGER SOLENOID

[PHOTO BOARD]

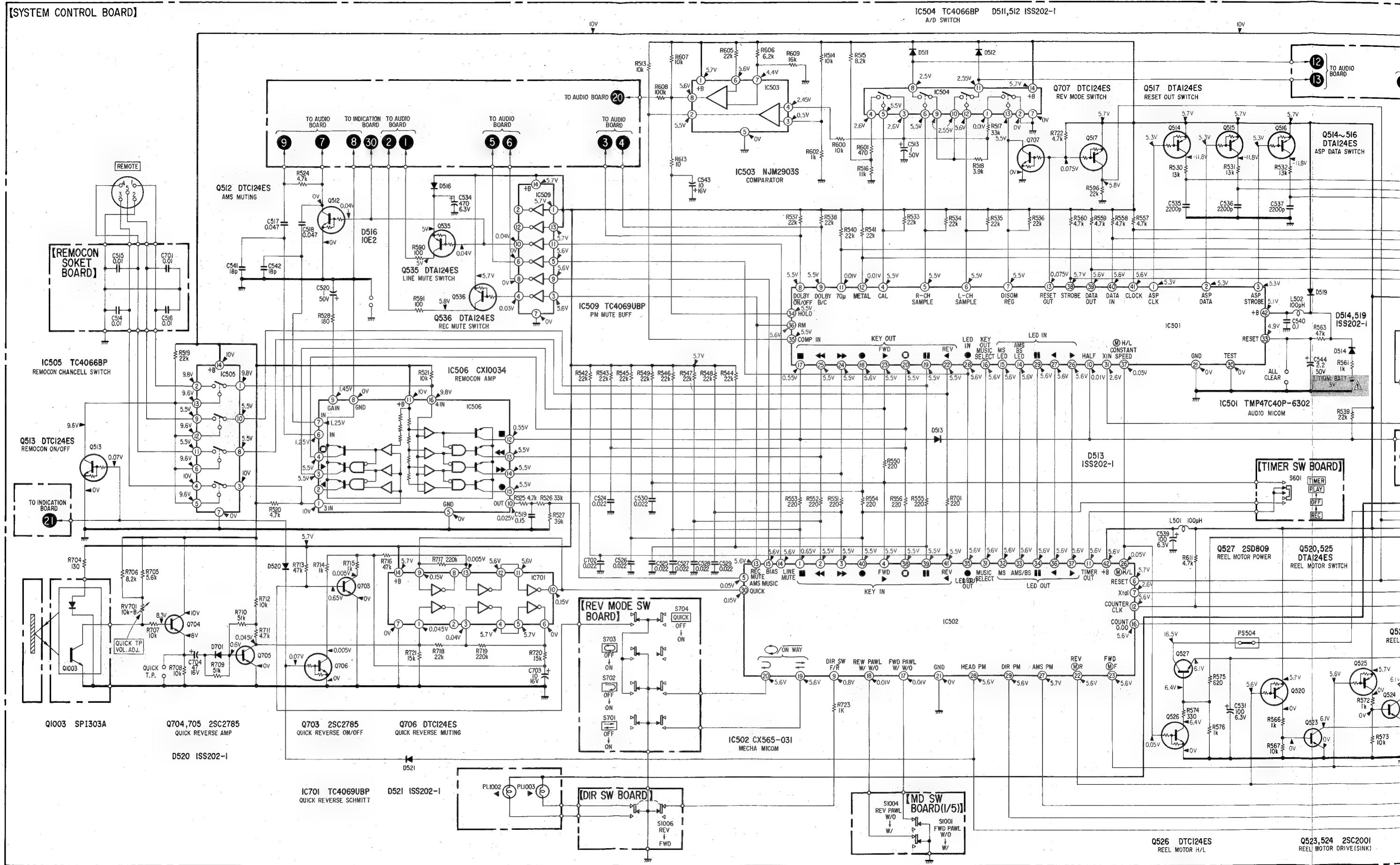


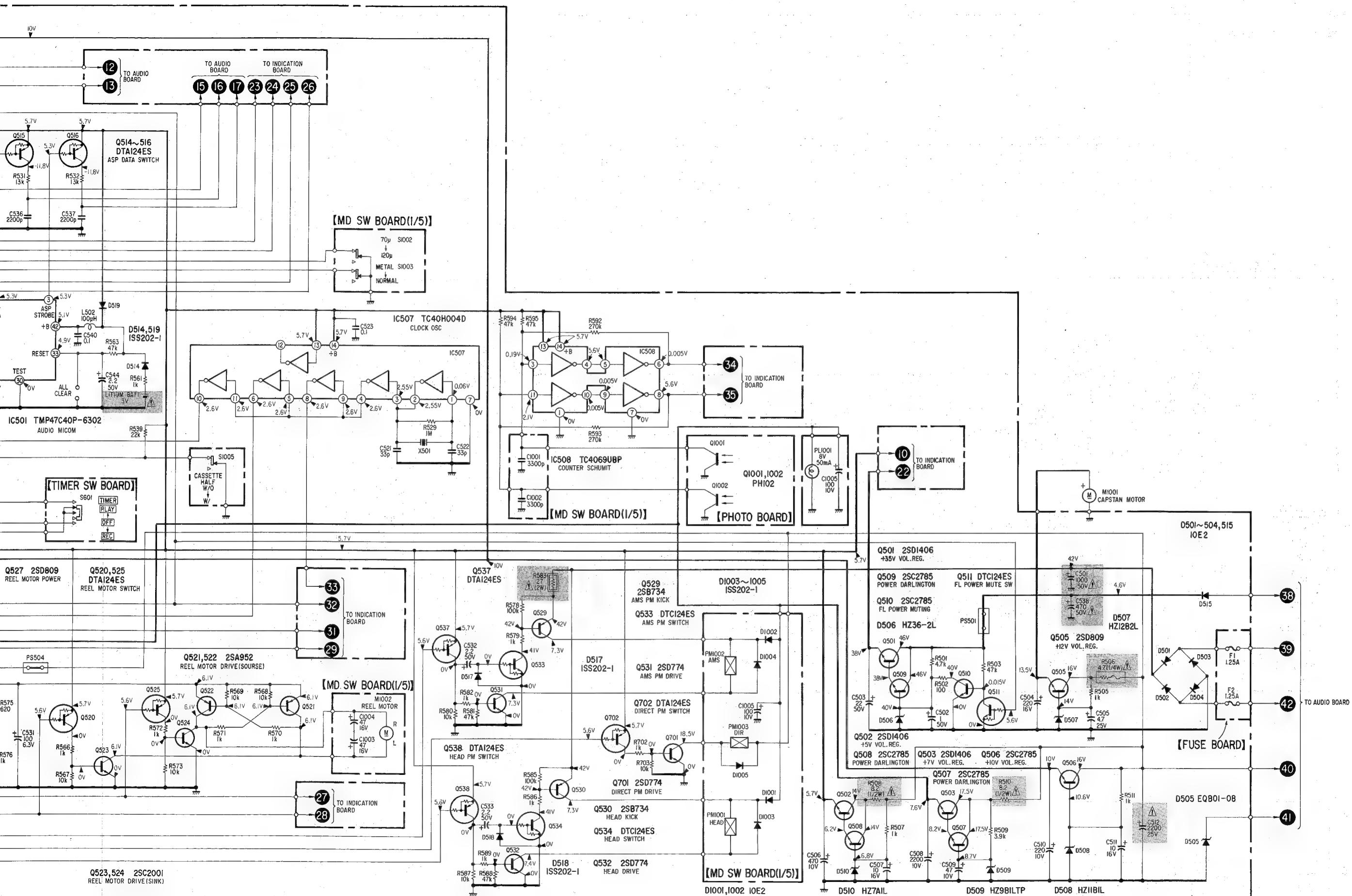
M1002  
REEL MOTOR

M1001  
CAPSTAN MOTOR

**4-4. SCHEMATIC DIAGRAM — *System Control Section* —** • See pages 37, 38 for Note.

- See pages 37, 38 for Note.



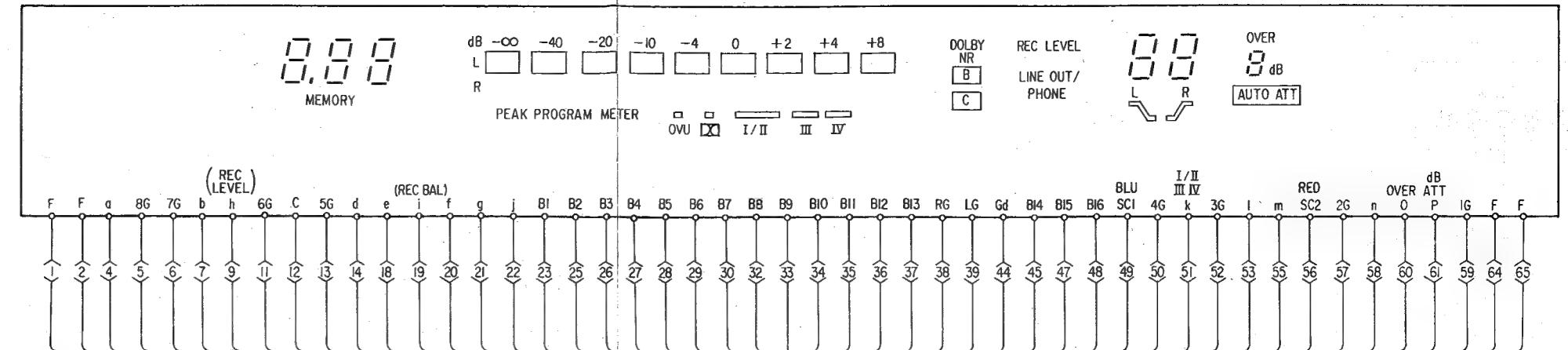


#### 4-5. MUNTING DIAGRAM

**– Indicator Section –**

- See page 39 for Semiconductor Lead Layouts.
- See page 33 for Note.

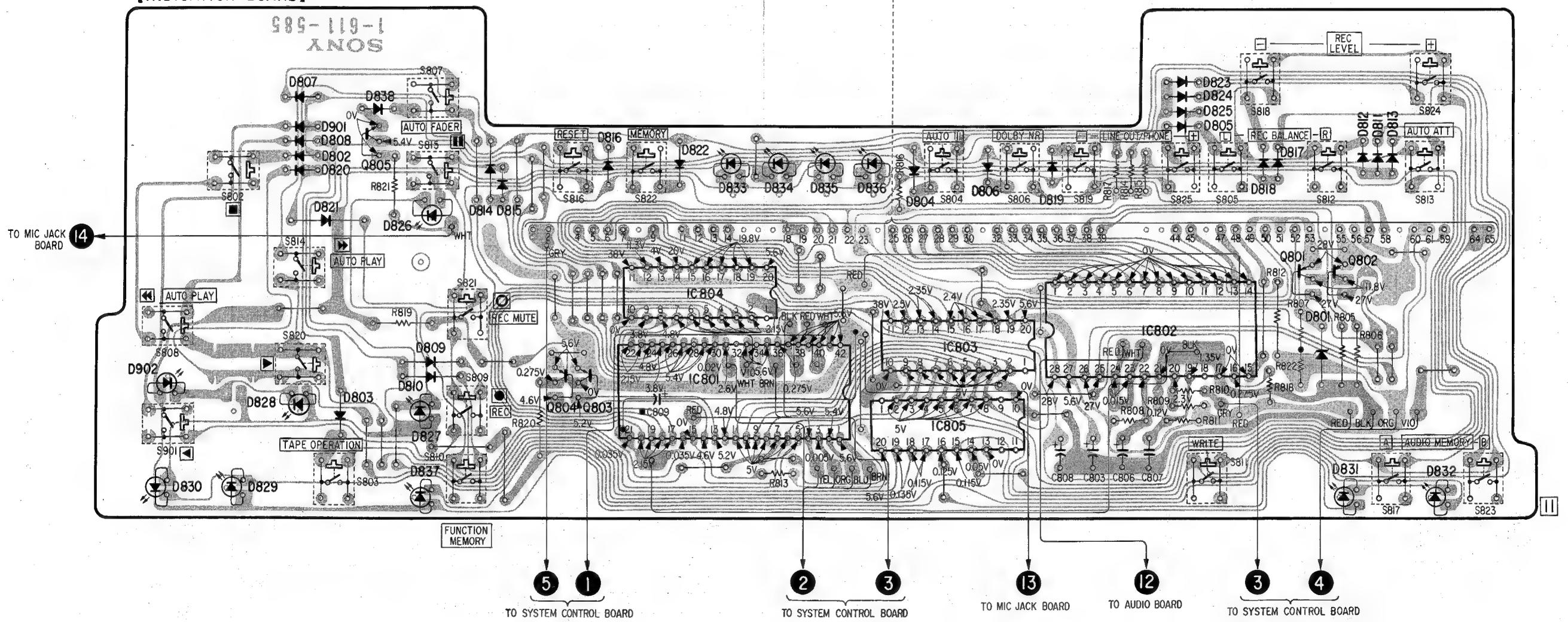
F



#### 4-6. SCHE

See page

## INDICATION BOARD

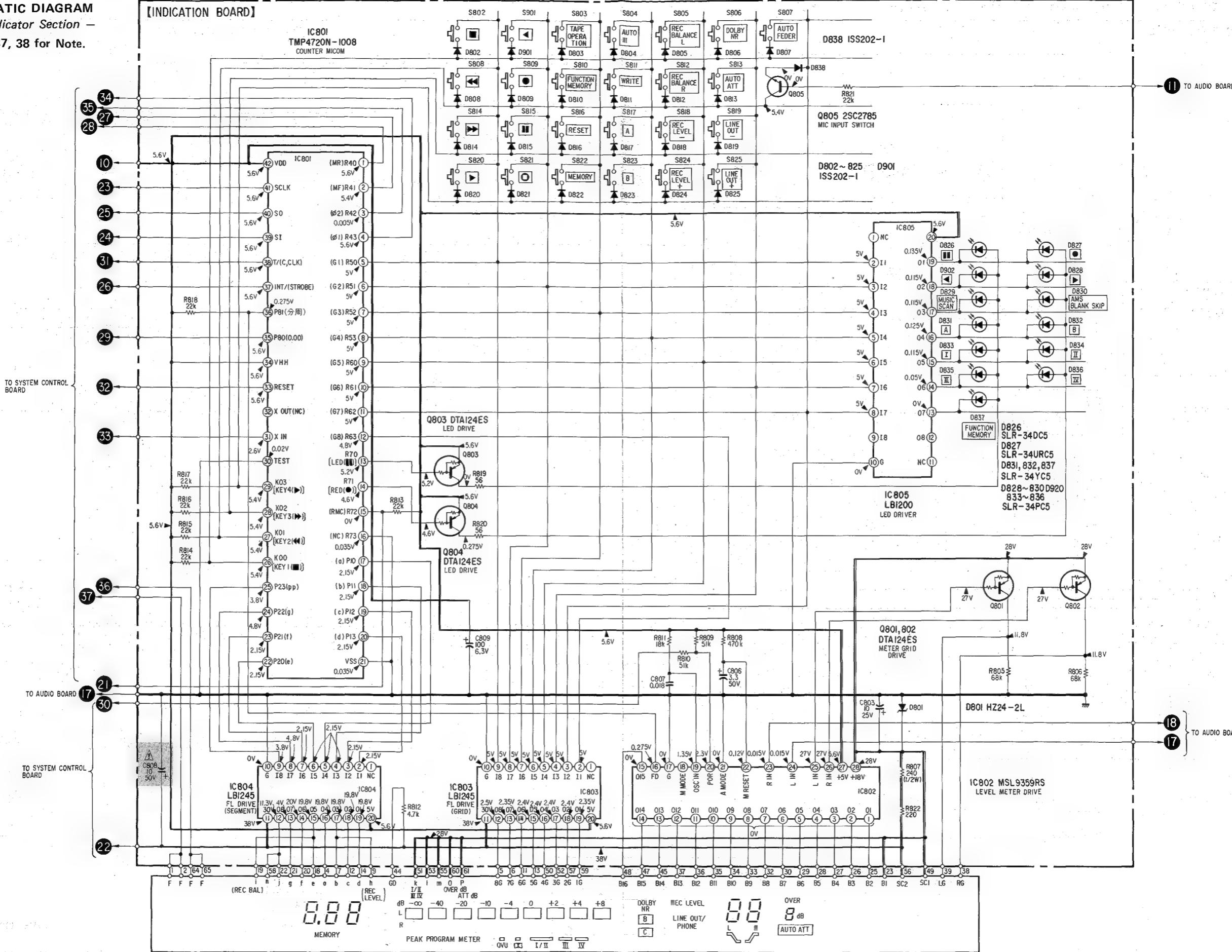


| Q<br>IC | 805        |            |            |            | 804 803    |            | IC804<br>IC801 |         | IC803<br>IC805 |     | IC802 |     | 801 802 |     |     |     |     |                          |            |            |                    |
|---------|------------|------------|------------|------------|------------|------------|----------------|---------|----------------|-----|-------|-----|---------|-----|-----|-----|-----|--------------------------|------------|------------|--------------------|
| D       | 902<br>830 | 807<br>829 | 820<br>828 | 821<br>808 | 838<br>803 | 826<br>810 | 809<br>827,837 | 814,815 | 816            | 822 | 833   | 834 | 835     | 836 | 804 | 806 | 819 | 823<br>824<br>825<br>805 | 818<br>801 | 817<br>831 | 812,811,813<br>832 |

#### 4-6. SCHEMATIC DIAGRAM

### *— Indicator Section —*

- See pages 37, 38 for Note



SECTION 5  
EXPLODED VIEWS AND PARTS LIST

1

2

3

4

5

6

7

5-1.

A

B

C

D

E

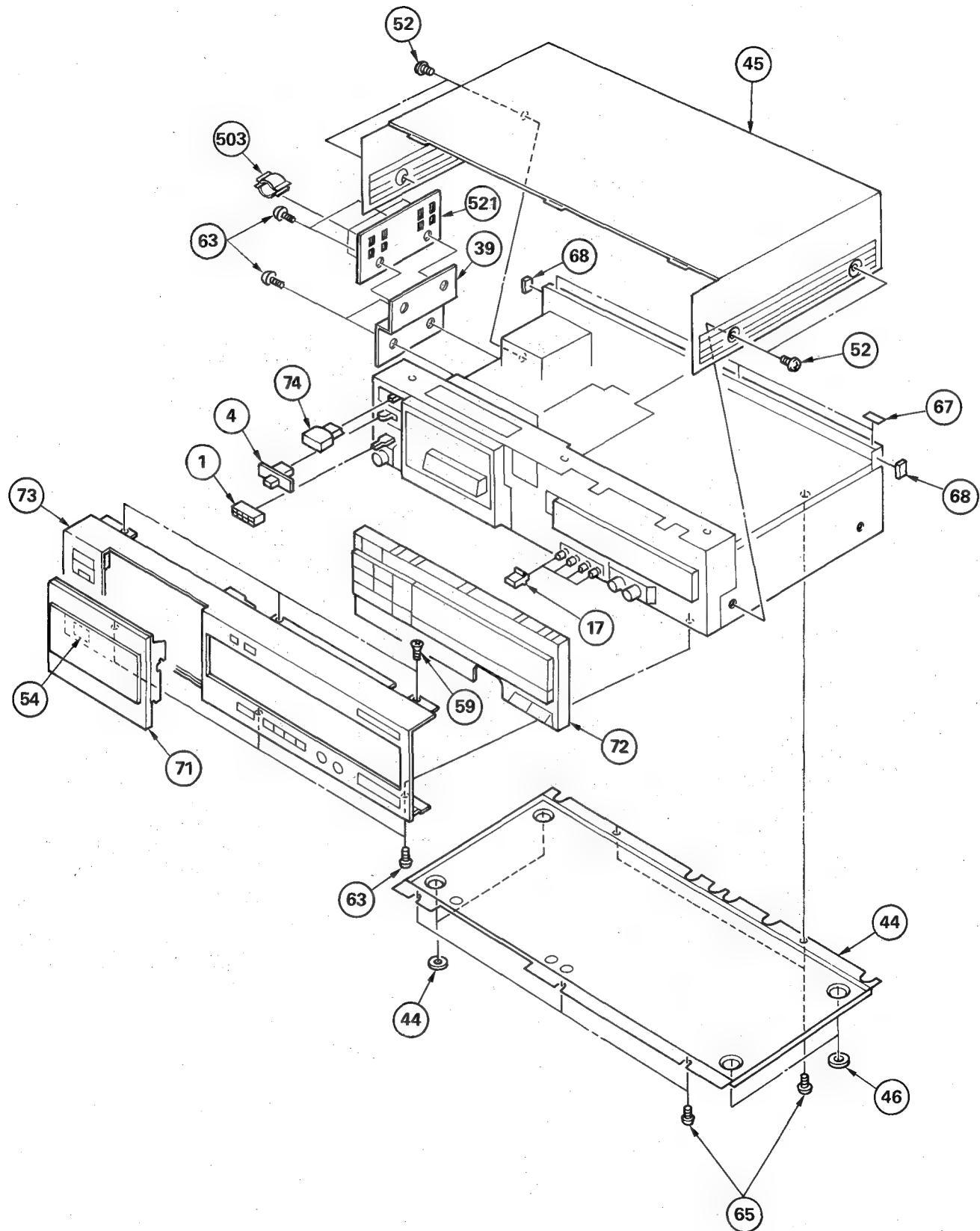
F

G

H

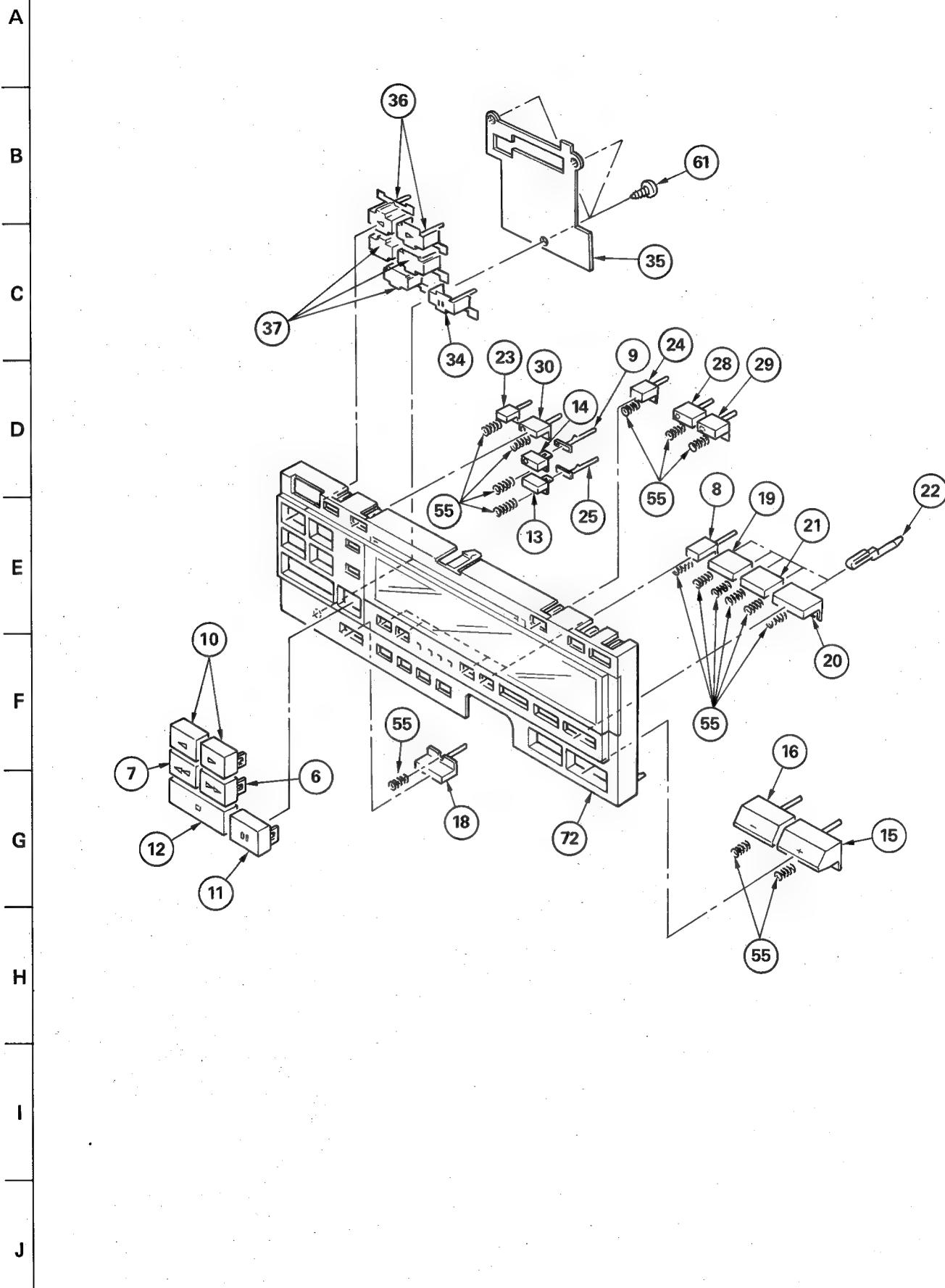
I

J



1 2 3 4 5 6 7 8

5-2.



1

2

3

4

5

6

7

5-3.

A

B

6

10

5

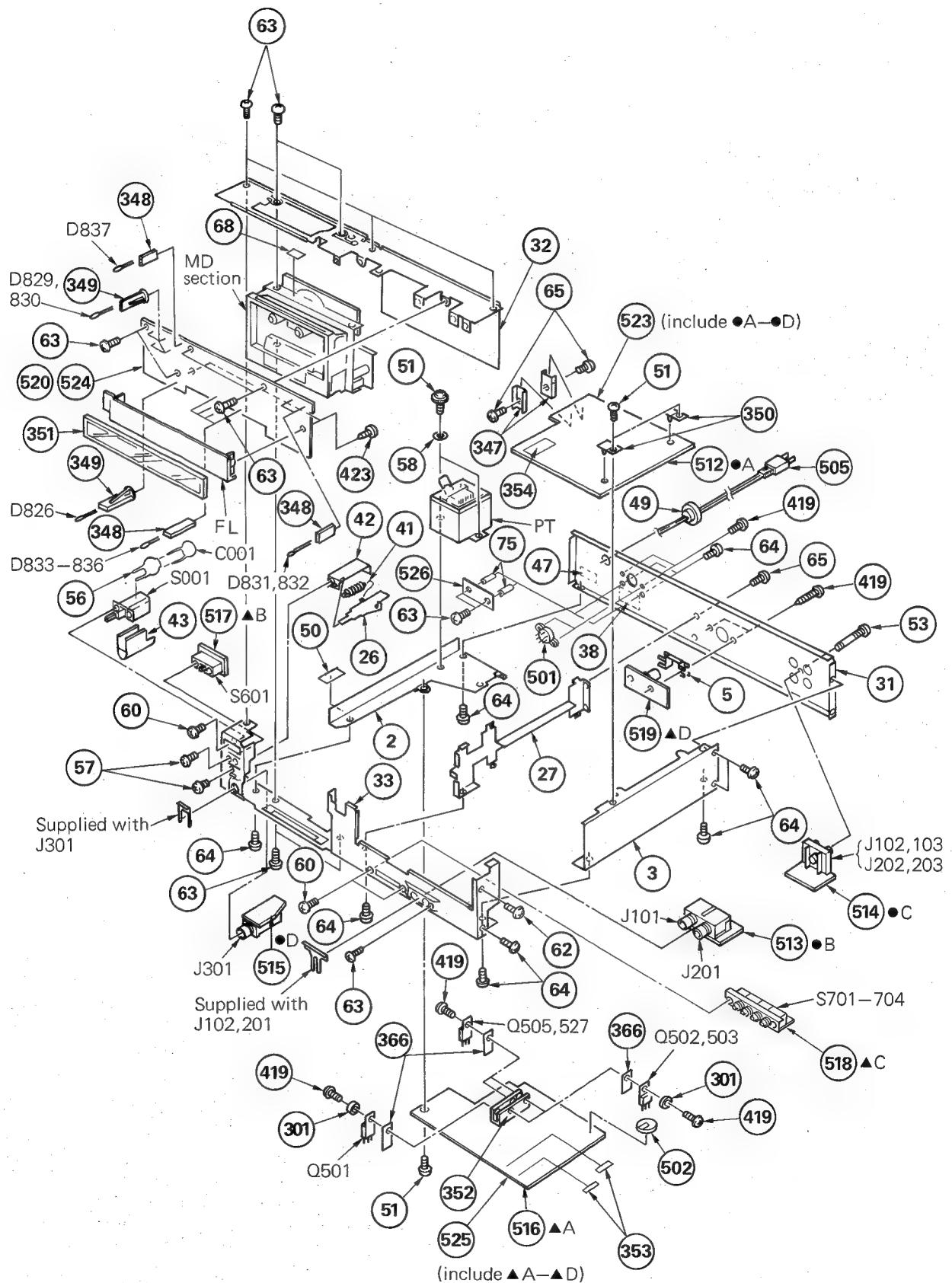
F

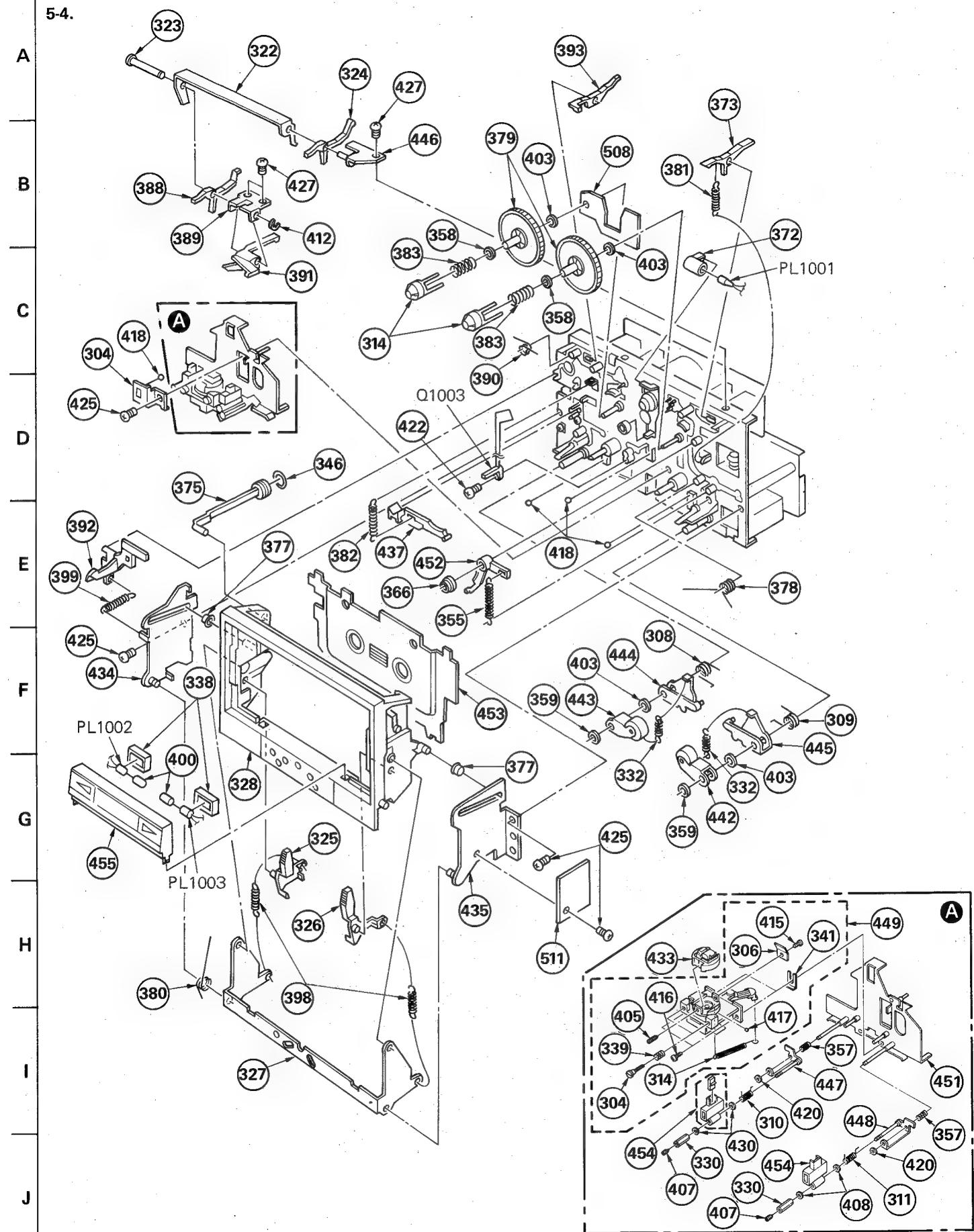
6

8

1

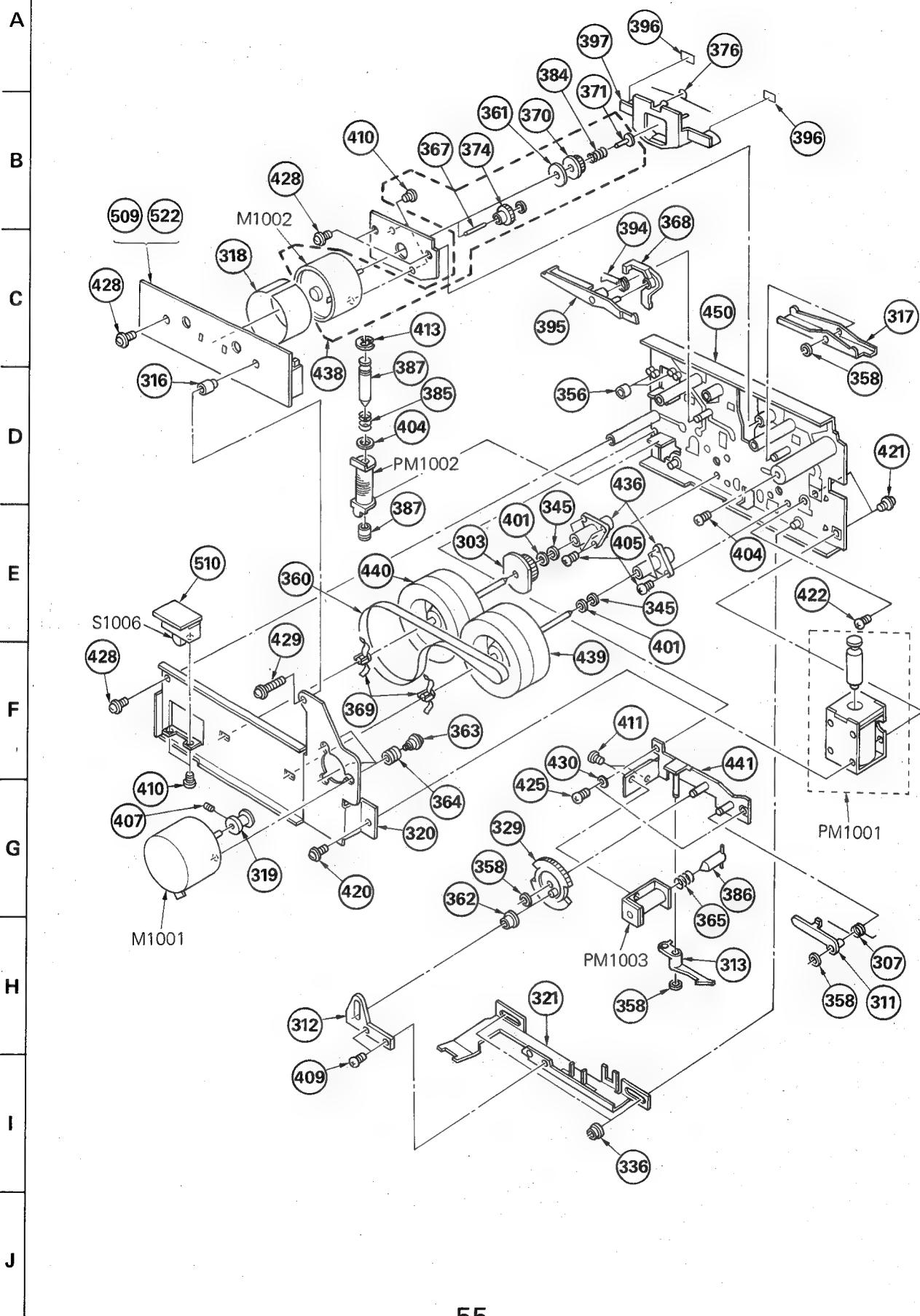
1





1 2 3 4 5 6 7

5-5.



## GENERAL SECTION

| No. | Part No.     | Description                          |
|-----|--------------|--------------------------------------|
| 1   | 3-304-419-00 | (SILVER)...BUTTON, EJECT             |
| 1   | 3-304-419-31 | (BLACK)....BUTTON, EJECT             |
| 2   | 3-304-423-00 | PLATE, SIDE, LEFT                    |
| 3   | 3-304-944-00 | PLATE, SIDE, RIGHT                   |
| 4   | 3-307-538-21 | (BLACK)....KNOB, SWITCH, TIMER       |
| 4   | 3-307-538-51 | (SILVER)....KNOB, SWITCH, TIMER      |
| 5   | 3-315-156-00 | SPACER, REMOTE CONTROL               |
| 6   | 3-317-101-01 | BUTTON, REW-FF                       |
| 7   | 3-317-101-11 | BUTTON, REW-FF                       |
| 8   | 3-317-102-00 | BUTTON (A), SQUARE                   |
| 9   | 3-317-103-00 | MOLD, RECORD BUTTON                  |
| 10  | 3-317-104-00 | BUTTON, REV-FWD                      |
| 11  | 3-317-105-00 | BUTTON, PAUSE                        |
| 12  | 3-317-106-00 | BUTTON, STOP                         |
| 13  | 3-317-107-00 | BUTTON, RECORD MUTE                  |
| 14  | 3-317-108-00 | BUTTON, RECORD                       |
| 15  | 3-317-110-00 | (SILVER)....BUTTON (+), RECORD LEVEL |
| 15  | 3-317-110-11 | (BLACK)....BUTTON (+), RECORD LEVEL  |
| 16  | 3-317-111-00 | (SILVER)....BUTTON (-), RECORD LEVEL |
| 16  | 3-317-111-11 | (BLACK)....BUTTON (-), RECORD LEVEL  |
| 17  | 3-317-112-00 | (SILVER)....KNOB, REVERSE MODE       |
| 17  | 3-317-112-11 | (BLACK)....KNOB, REVERSE MODE        |
| 18  | 3-317-113-00 | KNOB (A), SQUARE                     |
| 19  | 3-317-114-01 | KNOB (B), SQUARE                     |
| 20  | 3-317-114-11 | KNOB (B), SQUARE                     |
| 21  | 3-317-114-21 | KNOB (B), SQUARE                     |
| 22  | 3-317-116-00 | MOLD, CONTROL BUTTON                 |
| 23  | 3-317-117-01 | (SILVER)....BUTTON (B), SQUARE       |
| 23  | 3-317-117-21 | (BLACK)....BUTTON (B), SQUARE        |
| 24  | 3-317-117-11 | BUTTON (B), SQUARE                   |
| 25  | 3-317-120-00 | MOLD, RECORD MUTE BUTTON             |
| 26  | 3-317-121-00 | SLIDER, EJECT                        |
| 27  | 3-317-123-00 | PLATE, RELAY                         |
| 28  | 3-317-125-01 | BUTTON, TRANSLUCENT                  |
| 29  | 3-317-125-11 | BUTTON, TRANSLUCENT                  |
| 30  | 3-317-125-21 | (SILVER)....BUTTON, TRANSLUCENT      |
| 30  | 3-317-125-31 | (BLACK)....BUTTON, TRANSLUCENT       |
| 31  | 3-317-129-11 | (AEP).....PLATE, JACK                |
| 31  | 3-317-129-21 | (US).....PLATE, JACK                 |
| 31  | 3-317-129-31 | (E2/3).....PLATE, JACK               |
| 31  | 3-317-162-01 | (G-AEP).....PLATE, JACK              |
| 32  | 3-317-130-00 | JOINT                                |
| 33  | 3-317-133-00 | CHASSIS, AMPLIFIER                   |
| 34  | 3-317-135-00 | MOLD, PAUSE BUTTON                   |

GENERAL SECTION

| No. | Part No.     | Description                             |
|-----|--------------|-----------------------------------------|
| 35  | 3-317-136-00 | GUIDE, CONTROL BUTTON                   |
| 36  | 3-317-137-00 | MOLD, FWD BUTTON                        |
| 37  | 3-317-138-00 | MOLD, STOP BUTTON                       |
| 38  | 3-317-148-01 | (E2/3).....LABEL, MODEL NUMBER          |
| 38  | 3-317-150-01 | (US).....LABEL, MODEL NUMBER            |
| 38  | 3-317-154-01 | (AEP).....LABEL, MODEL NUMBER           |
| 38  | 3-317-160-01 | (G-AEP)....LABEL, MODEL NUMBER          |
| 39  | 3-317-156-01 | BRACKET, FUSE                           |
| 40  | 3-317-157-01 | INSTRUCTIONS                            |
| 41  | 3-534-238-XX | SPRING, TENSION                         |
| 42  | 3-575-502-00 | BRACKET, EJECT                          |
| 43  | 3-575-524-00 | (US,AEP)....COVER, POWER SWITCH         |
| 44  | 3-575-538-11 | PLATE, BOTTOM                           |
| 45  | 3-575-539-00 | (SILVER)...COVER, TOP                   |
| 45  | 3-575-539-41 | (BLACK)....COVER, TOP                   |
| 46  | 3-576-731-00 | FELT (H)                                |
| 47  | 3-701-030-00 | LABEL, SERIAL NUMBER                    |
| 48  | 3-701-437-21 | WASHER                                  |
| 49  | 3-701-682-00 | (US,E2/3).....STOPPER, CORD             |
| 49  | 3-703-244-00 | (AEP,G-AEP)....BUSHING, CORD            |
| 50  | 3-703-044-26 | (US)....LABEL, CAUTION                  |
| 51  | 3-703-249-01 | SCREW, S TIGHT, +PTTWH 3X6              |
| 52  | 4-889-321-01 | SCREW                                   |
| 53  | 3-703-473-00 | SCREW, TERMINAL                         |
| 54  | 3-703-710-01 | STICKER, SONY SYMBOL (12)               |
| 55  | 4-864-435-00 | SPRING, COMPRESSION                     |
| 56  | 4-875-455-01 | (AEP,G-AEP)....COVER (DIA,20) CAPACITOR |
| 56  | 4-875-455-21 | (E2/3).....COVER (DIA,20) CAPACITOR     |
| 57  | 7-621-775-10 | SCREW +B 2.6X4                          |
| 58  | 7-623-210-22 | SW 4, TYPE 2                            |
| 59  | 7-682-247-04 | SCREW +K 3X6                            |
| 60  | 7-682-647-01 | SCREW +PS 3X6                           |
| 61  | 7-685-534-19 | SCREW +BTP 2.6X8 TYPE2 N-S              |
| 62  | 7-685-870-01 | SCREW +BVTT 3X5 (S)                     |
| 63  | 7-685-871-01 | SCREW +BVTT 3X6 (S)                     |
| 64  | 7-685-871-09 | SCREW +BVTT 3X6 (S)                     |
| 65  | 7-685-872-01 | SCREW +BVTT 3X8 (S)                     |
| 66  | 9-911-815-02 | CUSHION                                 |
| 67  | 9-911-837-XX | CUSHION (B), FILTER                     |
| 68  | 9-911-841-XX | CUSHION                                 |
| 69  | 9-911-850-XX | FELT, TENSION REGULATOR                 |
| 70  | 9-911-862-XX | Sheet INSULATING                        |

**NOTE :**

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers ( $\Delta-\Delta\Delta-\Delta\Delta-\text{XX}$  or  $\Delta-\Delta\Delta\Delta-\Delta\Delta\Delta-\text{X}$ ) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF: $\mu$ F, PF: $\mu$ pF.

COLLUS

CONTINUATION

SEMICONDUCTORS

SEMICONDUCTORS  
In each case,  $U$  :  $\mu$ , for example:  
UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC,  
UPD---:  $\mu$ PD---

GENERAL SECTION

| No. | Part No.     | Description                       |
|-----|--------------|-----------------------------------|
| 71  | A-2169-073-A | (SILVER)...WINDOW ASSY, CASSETTE  |
| 71  | A-2169-081-A | (BLACK)...WINDOW ASSY, CASSETTE   |
| 72  | A-2191-006-A | (SILVER)...ESCUTCHEON ASSY, METER |
| 72  | A-2191-014-A | (BLACK)...ESCUTCHEON ASSY, METER  |
| 73  | A-2310-235-A | (SILVER)...PANEL ASSY, FRONT      |
| 73  | A-2310-245-A | (BLACK)...PANEL ASSY, FRONT       |
| 74  | X-3304-405-0 | (SILVER)...KNOB ASSY, POWER       |
| 74  | X-3304-911-0 | (BLACK)...KNOB ASSY, POWER        |
| 75  | 2-066-111-08 | (G-AEP).....COLLAR                |

ACCESSORY & PACKING MATERIAL

| <u>No.</u> | <u>Part No.</u> | <u>Description</u>                               |
|------------|-----------------|--------------------------------------------------|
| 101        | 1-551-734-11    | CORD, CONNECTION (RK-74A)                        |
| 102        | 3-315-149-00    | CUSHION (LEFT), LOWER                            |
| 103        | 3-315-150-00    | CUSHION (RIGHT), LOWER                           |
| 104        | 3-315-151-00    | CUSHION (LEFT), UPPER                            |
| 105        | 3-315-152-00    | CUSHION (RIGHT), UPPER                           |
| 106        | 3-317-159-00    | CARTON                                           |
| 107        | 3-573-625-00    | SHEET, POLYETHYLENE                              |
| 108        | 3-701-630-00    | BAG, POLYETHYLENE                                |
| 109        | 3-773-670-11    | (AEP, G-AEP, E2/3) . . . . . MANUAL, INSTRUCTION |
| 109        | 3-773-670-21    | (US) . . . . . MANUAL, INSTRUCTION               |
| 109        | 3-773-670-41    | (AEP, G-AEP) . . . . . MANUAL, INSTRUCTION       |
| 110        | 3-793-828-11    | QUESTIONNAIRE                                    |
| 111        | X-3701-105-0    | ROD ASSY. CLEANING, HEAD                         |

### MECHANISM SECTION

| No. | Part No.     | Description                   |
|-----|--------------|-------------------------------|
| 301 | 2-371-561-00 | BUSHING (P), INSULATING       |
| 302 | 3-306-223-00 | LEVER (B), TRIGGER            |
| 303 | 3-306-224-00 | GEAR, PINION                  |
| 304 | 3-306-225-00 | SPRING                        |
| 305 | 3-306-227-01 | SCREW, AZIMUTH ADJUSTMENT     |
| 306 | 3-306-228-01 | SPRING                        |
| 307 | 3-306-237-00 | SPRING                        |
| 308 | 3-306-239-00 | SPRING (LEFT)                 |
| 309 | 3-306-240-00 | SPRING (RIGHT)                |
| 310 | 3-306-249-00 | SPRING (LEFT)                 |
| 311 | 3-306-250-00 | SPRING (RIGHT)                |
| 312 | 3-306-251-00 | PLATE (A), SLIDE              |
| 313 | 3-306-253-00 | LEVER (A), TRIGGER            |
| 314 | 3-306-257-00 | CLAW, REEL TABLE              |
| 315 | 3-306-258-01 | SPRING, TENSION               |
| 316 | 3-306-259-00 | SPACER, PC BOARD              |
| 317 | 3-306-260-00 | LEVER, FWD                    |
| 318 | 3-306-261-00 | PLATE, SHIELD, MOTOR          |
| 319 | 3-306-262-00 | PULLEY (R), MOTOR             |
| 320 | 3-306-270-00 | RETAINER (RIGHT), THRUST      |
| 321 | 3-306-271-00 | SLIDER (A), SELECTION         |
| 322 | 3-306-279-00 | LEVER, ERASING PROTECTION     |
| 323 | 3-306-281-00 | SHAFT, DETECTION LEVER        |
| 324 | 3-306-282-00 | LEVER, REC DETECTION, REVERSE |
| 325 | 3-306-283-00 | RETAINER (LEFT), CASSETTE     |
| 326 | 3-306-284-00 | RETAINER (RIGHT), CASSETTE    |
| 327 | 3-306-285-00 | LEVER, HOLDER FULCRUM         |
| 328 | 3-306-286-00 | HOLDER, CASSETTE              |
| 329 | 3-306-287-00 | GEAR, TRIGGER                 |
| 330 | 3-306-288-00 | NUT, ADJUSTMENT, TAPE GUIDE   |
| 331 | 3-306-289-01 | SPRING, TENSION               |
| 332 | 3-306-295-01 | SPRING, TENSION               |
| 333 | 3-306-296-01 | RUBBER, STOPPER               |
| 334 | 3-306-297-01 | SEAM, HEAD ADJUSTMENT         |
| 335 | 3-306-297-11 | SEAM, HEAD ADJUSTMENT         |
| 336 | 3-307-367-00 | BUSHING, SELECT LEVER         |
| 337 | 3-307-394-00 | RETAINER (B), THRUST          |
| 338 | 3-307-459-00 | RUBBER, HOLDER                |
| 339 | 3-307-460-00 | SPRING, COMPRESSION           |
| 340 | 3-307-477-01 | SEAM (A), HEAD ADJUSTMENT     |
| 341 | 3-307-477-11 | SEAM (A), HEAD ADJUSTMENT     |
| 342 | 3-307-477-21 | SEAM (A), HEAD ADJUSTMENT     |
| 343 | 3-307-477-31 | SEAM (A), HEAD ADJUSTMENT     |
| 344 | 3-307-477-41 | SEAM (A), HEAD ADJUSTMENT     |
| 345 | 3-307-482-00 | WASHER, LUMILER               |

**NOTE :**

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers ( $\Delta-\Delta\Delta-\Delta\Delta-\Delta\Delta-XX$  or  $\Delta-\Delta\Delta\Delta-\Delta\Delta\Delta-X$ ) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

## COILS

301-302

SEMICONDUCTORS

SEMICONDUCTORS  
In each case,  $U = u$ , for example:  
 $UA\dots : \mu A\dots$ ,  $UPA\dots : \mu PA\dots$ ,  $UPC\dots : \mu PC$ ,  
 $UPD\dots : \mu PD\dots$

| MECHANISM SECTION |              |                           | MECHANISM SECTION |              |                                  |
|-------------------|--------------|---------------------------|-------------------|--------------|----------------------------------|
| No.               | Part No.     | Description               | No.               | Part No.     | Description                      |
| 346               | 3-312-441-00 | RING, PISTON              | 391               | 3-575-446-00 | LEVER, DETECTION, METAL          |
| 347               | 3-312-615-11 | HEAT SINK                 | 392               | 3-575-448-00 | LEVER, LOCK                      |
| 348               | 3-317-118-00 | HOLDER (A), LED           | 393               | 3-575-449-00 | LEVER, DETECTION, REC            |
| 349               | 3-317-119-00 | HOLDER (B), LED           | 394               | 3-575-458-00 | SPRING                           |
| 350               | 3-317-122-00 | HINGE, PC BOARD           | 395               | 3-575-460-00 | LEVER, SELECT TUNE               |
| 351               | 3-317-126-00 | HOLDER, FL TUBE           | 396               | 3-575-469-00 | LINING, BRAKE                    |
| 352               | 3-317-140-00 | HEAT SINK, SYSTEM CONTROL | 397               | 3-575-491-00 | PLATE, BRAKE                     |
| 353               | 3-317-143-00 | BOX (2), IC SHIELD        | 398               | 3-578-390-00 | SPRING, TENSION                  |
| 354               | 3-317-144-01 | PLATE, SHIELD, BIAS       | 399               | 3-632-261-00 | SPRING                           |
| 355               | 3-534-027-00 | SPRING, TENSION           | 400               | 3-669-305-00 | BUSHING                          |
| 356               | 3-538-051-00 | RUBBER, BRAKE             | 401               | 3-701-438-11 | WASHER, 2.5MM (t=0.25)           |
| 357               | 3-555-122-00 | SPRING, COMPRESSION       | 402               | 3-701-439-11 | WASHER, 3MM (t=0.25)             |
| 358               | 3-558-708-11 | WASHER, STOPPER           | 403               | 3-701-439-21 | WASHER, 3MM (t=0.50)             |
| 359               | 3-558-708-21 | WASHER, STOPPER           | 404               | 3-701-444-11 | WASHER, 5                        |
| 360               | 3-561-850-11 | BELT, CAPSTAN             | 405               | 7-621-714-16 | SET-SCREW, SLOT 1.7X2.5          |
| 361               | 3-564-027-11 | FELT, LIMITER             | 406               | 7-621-714-36 | SET-SCREW, SLOT 1.7X3 FLAT POINT |
| 362               | 3-564-933-00 | BOSS, FITTING, SPRING     | 407               | 7-621-732-08 | SET-SCT, HEX. 2X3 FLAT POINT     |
| 363               | 3-570-027-00 | SCREW, MOTOR              | 408               | 7-621-772-05 | SCREW +B 2X3                     |
| 364               | 3-570-118-00 | CUSHION, MOTOR            | 409               | 7-621-772-08 | SCREW +B 2X3                     |
| 365               | 3-571-850-11 | SPRING, COMPRESSION       | 410               | 7-621-775-00 | SCREW +B 2.6X3                   |
| 366               | 3-572-365-01 | SHEET (A), INSULATING     | 411               | 7-621-775-10 | SCREW +B 2.6X4                   |
| 367               | 3-575-304-00 | SHAFT, GEAR, FR           | 412               | 7-624-104-04 | STOP RING 2.0, TYPE -E           |
| 368               | 3-575-318-00 | LEVER, LOCK, TUNING       | 413               | 7-624-108-04 | RING, RETAINING E-4              |
| 369               | 3-575-321-00 | RETAINER, THRUST, CAPSTAN | 414               | 7-624-109-04 | STOP RING 5.0, TYPE -E           |
| 370               | 3-575-324-00 | GEAR, LIMITER             | 415               | 7-627-552-28 | SCREW, PRECISION +P 1.7X2        |
| 371               | 3-575-327-00 | STOPPER                   | 416               | 7-627-556-58 | SCREW +P 2.6X5                   |
| 372               | 3-575-328-00 | HOLDER, LAMP              | 417               | 7-671-111-11 | STEEL BALL 1.5MM                 |
| 373               | 3-575-331-00 | LEVER, DETECTION, HALF    | 418               | 7-671-113-02 | STEEL BALL 3                     |
| 374               | 3-575-332-00 | GEAR, FR                  | 419               | 7-682-548-04 | SCREW +B 3X8                     |
| 375               | 3-575-333-00 | PISTON                    | 420               | 7-682-947-01 | SCREW +PSW 3X6                   |
| 376               | 3-575-345-00 | SPRING                    | 421               | 7-682-949-01 | SCREW +PSW 3X10                  |
| 377               | 3-575-348-00 | ROLLER, GUIDE, THREADING  | 422               | 7-685-104-19 | SCREW +P 2X6 TYPE2 NON-SLIT      |
| 378               | 3-575-351-00 | SPRING                    | 423               | 7-685-647-71 | SCREW +BVTP 3X10 TYPE2 SLIT      |
| 379               | 3-575-353-11 | TABLE, REEL               | 424               | 7-685-860-04 | SCREW +BVTT 2.6X4 (S)            |
| 380               | 3-575-356-00 | SPRING                    | 425               | 7-685-861-01 | SCREW +BVTT 2.6X5 (S)            |
| 381               | 3-575-358-00 | SPRING, TENSION           | 426               | 7-685-870-01 | SCREW +BVTT 3X5 (S)              |
| 382               | 3-575-359-00 | SPRING, TENSION           | 427               | 7-685-871-01 | SCREW +BVTT 3X6 (S)              |
| 383               | 3-575-365-00 | SPRING, COMPRESSION       | 428               | 7-687-246-21 | SCREW, TOTSU PTPWH 3X8, TYPE2    |
| 384               | 3-575-368-00 | SPRING, COMPRESSION       | 429               | 7-687-250-21 | SCREW, TOTSU PTPWH 3X16, TYPE2   |
| 385               | 3-575-414-00 | SPRING, COMPRESSION       | 430               | 7-688-001-01 | W 2, SMALL                       |
| 386               | 3-575-415-11 | ARBOR, MOVABLE            | 431               | 7-688-002-01 | W 2.6, SMALL                     |
| 387               | 3-575-416-11 | ARBOR, FIXED              | 432               | 9-911-815-02 | CUSHION                          |
| 388               | 3-575-438-00 | LEVER, DETECTION          | 433               | A-2108-089-A | FITTING BLOCK ASSY, HEAD         |
| 389               | 3-575-440-00 | BRACKET, LEVER, DETECTION | 434               | X-3575-301-0 | PLATE (A) ASSY, HOLDER FULCRUM   |
| 390               | 3-575-441-00 | SPRING                    | 435               | X-3575-302-0 | PLATE (B) ASSY, FULCRUM          |

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- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: $\mu$ F, PF: $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:
- UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC,
- UPD---:  $\mu$ PD---

MECHANISM SECTION

| No. | Part No.       | Description                  |
|-----|----------------|------------------------------|
| 436 | X-3575-303-0   | METAL ASSY, CAPSTAN          |
| 437 | X-3575-310-0   | LEVER ASSY, TENSION, BACK    |
| 438 | X-3575-348-0   | MOTOR ASSY, REEL             |
| 439 | X-3575-356-0   | FLYWHEEL (LEFT) ASSY         |
| 440 | X-3575-357-0   | FLYWHEEL (RIGHT) ASSY        |
| 441 | ●;X-3575-358-0 | BRACKET ASSY, SOLENOID       |
| 442 | X-3575-360-0   | PINCH LEVER (RIGHT) ASSY     |
| 443 | X-3575-361-0   | PINCH LEVER (LEFT) ASSY      |
| 444 | ●;X-3575-362-0 | PLATE (LEFT) ASSY, LIMITER   |
| 445 | ●;X-3575-363-0 | PLATE (RIGHT) ASSY, LIMITER  |
| 446 | ●;X-3575-364-0 | BRACKET ASSY, LEVER          |
| 447 | ●;X-3575-365-0 | LEVER (LEFT) ASSY, GUIDE     |
| 448 | ●;X-3575-366-0 | LEVER (RIGHT) ASSY, GUIDE    |
| 449 | X-3575-367-0   | HEAD BLOCK ASSY              |
| 450 | ●;X-3575-368-0 | CHASSIS ASSY, MECHANICAL     |
| 451 | X-3575-369-0   | CHASSIS (RIGHT) ASSY, HEAD   |
| 452 | X-3575-370-0   | LEVER (R) ASSY, BACK TENSION |
| 453 | X-3575-371-0   | RETAINER ASSY, CASSETTE      |
| 454 | X-3575-376-1   | TAPE GUIDE ASSY              |
| 455 | X-3575-375-1   | DILECT HOLD ASSY             |

ELECTRICAL PARTS

| Ref.No. | Part No.       | Description                        |
|---------|----------------|------------------------------------|
| 506     | ●;1-560-060-00 | PIN, CONNECTOR 2P                  |
| 507     | 1-562-544-00   | SOCKET 5P                          |
| 508     | ●;1-603-823-00 | PC BOARD, PHOTO                    |
| 509     | ●;1-611-500-00 | PC BOARD, MD SW                    |
| 510     | ●;1-611-501-00 | PC BOARD, DIR SW                   |
| 511     | ●;1-611-502-00 | PC BOARD, HEAD TRANSLATION         |
| 512     | ●;1-611-576-00 | PC BOARD, AUDIO                    |
| 513     | ●;1-611-577-00 | PC BOARD, MIC JACK                 |
| 514     | ●;1-611-578-00 | PC BOARD, INPUT/OUTPUT JACK        |
| 515     | ●;1-611-579-00 | PC BOARD, HEADPHONE JACK           |
| 516     | ●;1-611-580-11 | PC BOARD, SYSTEM CONTROL           |
| 517     | ●;1-611-581-11 | PC BOARD, TIMER SW                 |
| 518     | ●;1-611-582-11 | PC BOARD, DIRECTION(REV)MODE SW    |
| 519     | ●;1-611-583-11 | PC BOARD, REMOCON SOCKET           |
| 520     | ●;1-611-585-00 | PC BOARD, INDICATION               |
| 521     | ●;1-612-397-21 | (US).....PC BOARD, FUSE            |
| 521     | 1-612-397-31   | (AEP,G-AEP,E2/3)....PC BOARD, FUSE |
| 522     | ●;A-2023-298-A | MOUNTED PCB, MD SWITCH             |
| 523     | ●;A-2056-208-A | MOUNTED PCB, AUDIO                 |
| 524     | ●;A-2056-210-A | MOUNTED PCB, INDICATION            |
| 525     | ●;A-2056-220-A | MOUNTED PCB, SYSTEM CONTROL        |
| 526     | 1-612-712-11   | (G-AEP)....PC BOARD, FILTER        |
| C001    | △;1-161-744-00 | CAP, CERAMIC 1000PF FZ 400V        |
| C002    | 1-161-741-00   | (G-AEP)....CERAMIC 1000PF          |
| C003    | 1-161-741-00   | (G-AEP)....CERAMIC 1000PF          |
| C004    | 1-161-741-00   | (G-AEP)....CERAMIC 1000PF          |
| C005    | 1-161-740-00   | (US).....CERAMIC 470PF             |
| C006    | 1-161-740-00   | (US).....CERAMIC 470PF             |
| C101    | 1-123-356-00   | ELECT 10MF 20% 16V                 |
| C102    | 1-161-271-00   | CERAMIC 100PF 5% 50V               |
| C103    | 1-123-356-00   | ELECT 10MF 20% 16V                 |
| C104    | 1-123-369-00   | ELECT 4.7MF 20% 50V                |
| C105    | 1-123-330-00   | ELECT 22MF 20% 16V                 |
| C106    | 1-161-380-00   | CERAMIC 0.0015MF 10% 50V           |
| C111    | 1-161-321-00   | CERAMIC 680PF 10% 50V              |
| C112    | 1-130-305-00   | FILM 0.022MF 5% 100V               |
| C113    | 1-124-185-00   | ELECT 4.7MF 20% 50V                |
| C114    | 1-108-571-00   | MYLAR 0.0047MF 5% 50V              |
| C115    | 1-161-316-00   | CERAMIC 270PF 10% 50V              |
| C121    | 1-130-630-00   | FILM 0.068MF 5% 50V                |
| C122    | 1-130-633-00   | FILM 0.12MF 5% 50V                 |
| C123    | 1-130-635-00   | FILM 0.18MF 5% 50V                 |
| C124    | 1-130-637-00   | FILM 0.27MF 5% 50V                 |
| C125    | 1-130-625-00   | FILM 0.027MF 5% 50V                |
| C126    | 1-123-380-00   | ELECT 1MF 20% 50V                  |

ELECTRICAL PARTS

| Ref.No. | Part No.       | Description                           |
|---------|----------------|---------------------------------------|
| 501     | △;1-526-576-51 | (E2/3)....SELECTOR, POWER VOLTAGE     |
| 502     | △;1-528-120-00 | BATTERY, LITHIUM (CR-2025)            |
| 503     | 1-533-131-00   | HOLDER, FUSE                          |
| 504     | 1-535-506-11   | (E2/3)....CONNECTION PRESS TERMINAL   |
| 505     | △;1-534-817-XX | (AEP,G-AEP)....CORD, POWER, EURO PLUG |
| 505     | △;1-551-472-00 | (E2).....CORD, POWER                  |
| 505     | △;1-551-506-XX | (US).....CORD, POWER                  |
| 505     | △;1-555-734-00 | (E3).....CORD, POWER                  |

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## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF:  $\mu$ F, PF:  $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:  
UA...:  $\mu$ A..., UPA...:  $\mu$ PA..., UPC...:  $\mu$ PC,  
UPD...:  $\mu$ PD...

The components identified by shading and mark △ are critical for safety.  
Replace only with part number specified.

## ELECTRICAL PARTS

## Ref. No. Part No. Description

|      |              |         |          |     |      |
|------|--------------|---------|----------|-----|------|
| C127 | 1-130-635-00 | FILM    | 0.18MF   | 5%  | 50V  |
| C128 | 1-130-630-00 | FILM    | 0.068MF  | 5%  | 50V  |
| C129 | 1-123-380-00 | ELECT   | 1MF      | 20% | 50V  |
| C130 | 1-130-633-00 | FILM    | 0.12MF   | 5%  | 50V  |
| C131 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C132 | 1-130-622-00 | FILM    | 0.015MF  | 5%  | 50V  |
| C133 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C134 | 1-124-185-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C135 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C136 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C151 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C152 | 1-130-638-00 | FILM    | 0.33MF   | 5%  | 50V  |
| C153 | 1-123-330-00 | ELECT   | 22MF     | 20% | 16V  |
| C154 | 1-124-185-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C155 | 1-161-318-00 | CERAMIC | 390PF    | 10% | 50V  |
| C156 | 1-107-036-00 | MICA    | 68PF     | 5%  | 500V |
| C157 | 1-107-165-00 | MICA    | 56PF     | 5%  | 500V |
| C158 | 1-108-577-00 | MYLAR   | 0.0082MF | 5%  | 50V  |
| C159 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C160 | 1-130-629-00 | FILM    | 0.056MF  | 5%  | 50V  |
| C161 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C162 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C163 | 1-130-630-00 | FILM    | 0.068MF  | 5%  | 50V  |
| C164 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C165 | 1-108-567-00 | MYLAR   | 0.0033MF | 5%  | 50V  |
| C166 | 1-130-626-00 | FILM    | 0.033MF  | 5%  | 50V  |
| C176 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C177 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C192 | 1-123-356-00 | ELECT   | 10MF     | 20% | 16V  |
| C201 | 1-123-356-00 | ELECT   | 10MF     | 20% | 16V  |
| C202 | 1-161-271-00 | CERAMIC | 100PF    | 5%  | 50V  |
| C203 | 1-123-356-00 | ELECT   | 10MF     | 20% | 16V  |
| C204 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C205 | 1-123-330-00 | ELECT   | 22MF     | 20% | 16V  |
| C206 | 1-161-380-00 | CERAMIC | 0.0015MF | 10% | 50V  |
| C211 | 1-161-321-00 | CERAMIC | 680PF    | 10% | 50V  |
| C212 | 1-130-305-00 | FILM    | 0.022MF  | 5%  | 100V |
| C213 | 1-124-185-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C214 | 1-108-571-00 | MYLAR   | 0.0047MF | 5%  | 50V  |
| C215 | 1-161-316-00 | CERAMIC | 270PF    | 10% | 50V  |
| C221 | 1-130-630-00 | FILM    | 0.068MF  | 5%  | 50V  |
| C222 | 1-130-633-00 | FILM    | 0.12MF   | 5%  | 50V  |
| C223 | 1-130-635-00 | FILM    | 0.18MF   | 5%  | 50V  |
| C224 | 1-130-637-00 | FILM    | 0.27MF   | 5%  | 50V  |
| C225 | 1-130-625-00 | FILM    | 0.027MF  | 5%  | 50V  |

## ELECTRICAL PARTS

## Ref. No. Part No. Description

|      |              |         |          |     |      |
|------|--------------|---------|----------|-----|------|
| C226 | 1-123-380-00 | ELECT   | 1MF      | 20% | 50V  |
| C227 | 1-130-635-00 | FILM    | 0.18MF   | 5%  | 50V  |
| C228 | 1-130-630-00 | FILM    | 0.068MF  | 5%  | 50V  |
| C229 | 1-123-380-00 | ELECT   | 1MF      | 20% | 50V  |
| C230 | 1-130-633-00 | FILM    | 0.12MF   | 5%  | 50V  |
| C231 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C232 | 1-130-622-00 | FILM    | 0.015MF  | 5%  | 50V  |
| C233 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C234 | 1-124-185-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C235 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C236 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C251 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C252 | 1-130-638-00 | FILM    | 0.33MF   | 5%  | 50V  |
| C253 | 1-123-330-00 | ELECT   | 22MF     | 20% | 16V  |
| C254 | 1-124-185-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C255 | 1-161-318-00 | CERAMIC | 390PF    | 10% | 50V  |
| C256 | 1-107-036-00 | MICA    | 68PF     | 5%  | 500V |
| C257 | 1-107-165-00 | MICA    | 56PF     | 5%  | 500V |
| C258 | 1-108-577-00 | MYLAR   | 0.0082MF | 5%  | 50V  |
| C259 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C260 | 1-130-629-00 | FILM    | 0.056MF  | 5%  | 50V  |
| C261 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C262 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C263 | 1-130-630-00 | FILM    | 0.068MF  | 5%  | 50V  |
| C264 | 1-130-620-00 | FILM    | 0.01MF   | 5%  | 50V  |
| C265 | 1-108-567-00 | MYLAR   | 0.0033MF | 5%  | 50V  |
| C266 | 1-130-626-00 | FILM    | 0.033MF  | 5%  | 50V  |
| C276 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C277 | 1-123-369-00 | ELECT   | 4.7MF    | 20% | 50V  |
| C292 | 1-123-356-00 | ELECT   | 10MF     | 20% | 16V  |
| C301 | 1-123-337-00 | ELECT   | 1000MF   | 20% | 25V  |
| C302 | 1-123-337-00 | ELECT   | 1000MF   | 20% | 25V  |
| C303 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C304 | 1-123-307-00 | ELECT   | 100MF    | 20% | 10V  |
| C305 | 1-124-070-00 | ELECT   | 220MF    | 20% | 10V  |
| C306 | 1-124-070-00 | ELECT   | 220MF    | 20% | 10V  |
| C307 | 1-123-321-00 | ELECT   | 220MF    | 20% | 16V  |
| C308 | 1-123-321-00 | ELECT   | 220MF    | 20% | 16V  |
| C309 | 1-123-382-00 | ELECT   | 3.3MF    | 20% | 50V  |
| C311 | 1-123-356-00 | ELECT   | 10MF     | 20% | 16V  |
| C312 | 1-123-379-00 | ELECT   | 0.47MF   | 20% | 50V  |
| C313 | 1-124-089-00 | ELECT   | 2.2MF    | 20% | 50V  |
| C314 | 1-130-023-00 | FILM    | 0.0027MF | 5%  | 100V |
| C315 | 1-130-023-00 | FILM    | 0.0027MF | 5%  | 100V |
| C316 | 1-130-289-00 | FILM    | 0.0047MF | 5%  | 100V |

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers ( $\Delta-\Delta\Delta-\Delta\Delta-\Delta\Delta-XX$  or  $\Delta-\Delta\Delta\Delta-\Delta\Delta\Delta-X$ ) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:  
All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 $\text{MF} : \mu\text{F}$ ,  $\text{PF} : \mu\mu\text{F}$ .

## COILS

$\text{MH} : \text{mH}$ ,  $\text{UH} : \mu\text{H}$

SEMICONDUCTORS  
In each case,  $U : \mu$ , for example:  
 $\text{UA}... : \mu\text{A}...$ ,  $\text{UPA}... : \mu\text{PA}...$ ,  $\text{UPC}... : \mu\text{PC}...$ ,  
 $\text{UPD}... : \mu\text{PD}...$

ELECTRICAL PARTS

| Ref. No. | Part No.     | Description |          |     |      |  |
|----------|--------------|-------------|----------|-----|------|--|
| C317     | 1-129-714-00 | FILM        | 0.01MF   | 5%  | 630V |  |
| C324     | 1-123-307-00 | ELECT       | 100MF    | 20% | 10V  |  |
| C331     | 1-123-307-00 | ELECT       | 100MF    | 20% | 10V  |  |
| C332     | 1-123-307-00 | ELECT       | 100MF    | 20% | 10V  |  |
| C333     | 1-123-307-00 | ELECT       | 100MF    | 20% | 10V  |  |
| C334     | 1-123-307-00 | ELECT       | 100MF    | 20% | 10V  |  |
| C335     | 1-123-330-00 | ELECT       | 22MF     | 20% | 16V  |  |
| C337     | 1-123-356-00 | ELECT       | 10MF     | 20% | 16V  |  |
| C339     | 1-161-330-00 | CERAMIC     | 0.01MF   | 30% | 25V  |  |
| C340     | 1-161-330-00 | CERAMIC     | 0.01MF   | 30% | 25V  |  |
| C501     | 1-123-364-00 | ELECT       | 1000MF   | 20% | 50V  |  |
| C502     | 1-123-380-00 | ELECT       | 1MF      | 20% | 50V  |  |
| C503     | 1-123-357-00 | ELECT       | 22MF     | 20% | 50V  |  |
| C504     | 1-123-321-00 | ELECT       | 220MF    | 20% | 16V  |  |
| C505     | 1-123-328-00 | ELECT       | 4.7MF    | 20% | 25V  |  |
| C506     | 1-123-310-00 | ELECT       | 470MF    | 20% | 10V  |  |
| C507     | 1-123-356-00 | ELECT       | 10MF     | 20% | 16V  |  |
| C508     | 1-123-312-00 | ELECT       | 2200MF   | 20% | 10V  |  |
| C509     | 1-123-306-00 | ELECT       | 47MF     | 20% | 10V  |  |
| C510     | 1-123-308-00 | ELECT       | 220MF    | 20% | 10V  |  |
| C511     | 1-123-356-00 | ELECT       | 10MF     | 20% | 16V  |  |
| C512     | 1-123-338-00 | ELECT       | 2200MF   | 20% | 25V  |  |
| C513     | 1-123-380-00 | ELECT       | 1MF      | 20% | 50V  |  |
| C514     | 1-161-330-00 | CERAMIC     | 0.01MF   | 30% | 25V  |  |
| C515     | 1-161-330-00 | CERAMIC     | 0.01MF   | 30% | 25V  |  |
| C516     | 1-161-330-00 | CERAMIC     | 0.01MF   | 30% | 25V  |  |
| C517     | 1-130-628-00 | FILM        | 0.047MF  | 5%  | 50V  |  |
| C518     | 1-130-628-00 | FILM        | 0.047MF  | 5%  | 50V  |  |
| C519     | 1-130-634-00 | FILM        | 0.15MF   | 5%  | 50V  |  |
| C520     | 1-123-380-00 | ELECT       | 1MF      | 20% | 50V  |  |
| C521     | 1-162-056-00 | CERAMIC     | 33PF     | 5%  | 50V  |  |
| C522     | 1-162-056-00 | CERAMIC     | 33PF     | 5%  | 50V  |  |
| C523     | 1-161-974-00 | CERAMIC     | 0.1MF    | 0   | 16V  |  |
| C524     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C525     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C526     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C527     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C528     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C529     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C530     | 1-161-494-00 | CERAMIC     | 0.022MF  | 30% | 25V  |  |
| C531     | 1-123-295-00 | ELECT       | 100MF    | 20% | 6.3V |  |
| C532     | 1-123-381-00 | ELECT       | 2.2MF    | 20% | 50V  |  |
| C533     | 1-123-381-00 | ELECT       | 2.2MF    | 20% | 50V  |  |
| C534     | 1-123-298-00 | ELECT       | 470MF    | 20% | 6.3V |  |
| C535     | 1-161-326-00 | CERAMIC     | 0.0022MF | 30% | 50V  |  |

ELECTRICAL PARTS

| Ref. No.                                 | Part No.     | Description             |          |     |      |  |
|------------------------------------------|--------------|-------------------------|----------|-----|------|--|
| C536                                     | 1-161-326-00 | CERAMIC                 | 0.0022MF | 30% | 50V  |  |
| C537                                     | 1-161-326-00 | CERAMIC                 | 0.0022MF | 30% | 50V  |  |
| C538                                     | 1-123-363-00 | ELECT                   | 470MF    | 20% | 50V  |  |
| C539                                     | 1-123-295-00 | ELECT                   | 100MF    | 20% | 6.3V |  |
| C540                                     | 1-161-974-00 | CERAMIC                 | 0.1MF    | 0   | 16V  |  |
| C541                                     | 1-161-262-00 | CERAMIC                 | 18PF     | 5%  | 50V  |  |
| C542                                     | 1-161-262-00 | CERAMIC                 | 18PF     | 5%  | 50V  |  |
| C543                                     | 1-123-356-00 | ELECT                   | 10MF     | 20% | 16V  |  |
| C544                                     | 1-124-089-00 | ELECT                   | 2.2MF    | 20% | 50V  |  |
| C701                                     | 1-161-330-00 | CERAMIC                 | 0.01MF   | 30% | 25V  |  |
| C702                                     | 1-161-494-00 | CERAMIC                 | 0.022MF  | 30% | 25V  |  |
| C703                                     | 1-123-356-00 | ELECT                   | 10MF     | 20% | 16V  |  |
| C704                                     | 1-123-319-00 | ELECT                   | 47MF     | 20% | 16V  |  |
| C803                                     | 1-123-356-00 | ELECT                   | 10MF     | 20% | 25V  |  |
| C806                                     | 1-123-354-00 | ELECT                   | 3.3MF    | 20% | 50V  |  |
| C807                                     | 1-130-623-00 | FILM                    | 0.018MF  | 5%  | 50V  |  |
| C808                                     | 1-123-356-00 | ELECT                   | 10MF     | 20% | 50V  |  |
| C809                                     | 1-123-295-00 | ELECT                   | 100MF    | 20% | 6.3V |  |
| C810                                     | 1-161-741-00 | (US, G-AEP) ... CERAMIC | 0.022MF  | 30% | 25V  |  |
| C1001                                    | 1-161-327-00 | CERAMIC                 | 0.0033MF | 30% | 50V  |  |
| C1002                                    | 1-161-327-00 | CERAMIC                 | 0.0033MF | 30% | 50V  |  |
| C1003                                    | 1-123-332-00 | ELECT                   | 47MF     | 20% | 16V  |  |
| C1004                                    | 1-123-322-00 | ELECT                   | 47MF     | 20% | 16V  |  |
| C1005                                    | 1-123-307-00 | ELECT                   | 100MF    | 20% | 10V  |  |
| ◆ CNP301; 1-560-605-00 PIN, CONNECTOR 6P |              |                         |          |     |      |  |
| ◆ CNP302; 1-560-708-00 PIN, CONNECTOR 2P |              |                         |          |     |      |  |
| ◆ CNP303; 1-560-708-00 PIN, CONNECTOR 2P |              |                         |          |     |      |  |
| ◆ CNP304; 1-560-060-00 PIN, CONNECTOR 2P |              |                         |          |     |      |  |
| ◆ CNP305; 1-560-062-00 PIN, CONNECTOR 4P |              |                         |          |     |      |  |
| ◆ CNP306; 1-560-708-00 PIN, CONNECTOR 2P |              |                         |          |     |      |  |
| ◆ CNP307; 1-560-602-00 PIN, CONNECTOR 3P |              |                         |          |     |      |  |
| ◆ CNP502; 1-560-061-00 PIN, CONNECTOR 3P |              |                         |          |     |      |  |
| ◆ CNP503; 1-560-338-00 PIN, CONNECTOR 7P |              |                         |          |     |      |  |
| ◆ CNP504; 1-560-062-00 PIN, CONNECTOR 4P |              |                         |          |     |      |  |
| ◆ CNP505; 1-560-063-00 PIN, CONNECTOR 5P |              |                         |          |     |      |  |
| ◆ CNP506; 1-560-064-00 PIN, CONNECTOR 6P |              |                         |          |     |      |  |
| ◆ CNP507; 1-560-062-00 PIN, CONNECTOR 4P |              |                         |          |     |      |  |
| ◆ CNP508; 1-560-061-00 PIN, CONNECTOR 3P |              |                         |          |     |      |  |
| ◆ CNP509; 1-560-063-00 PIN, CONNECTOR 5P |              |                         |          |     |      |  |
| ◆ CNP512; 1-560-061-00 PIN, CONNECTOR 3P |              |                         |          |     |      |  |
| ◆ CNP513; 1-560-063-00 PIN, CONNECTOR 5P |              |                         |          |     |      |  |
| ◆ CNP701; 1-560-061-00 PIN, CONNECTOR 3P |              |                         |          |     |      |  |
| CT301 1-141-225-00 CAP, TUNING, TRIMMER  |              |                         |          |     |      |  |

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "◆" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-XX) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF:  $\mu$ F, PF:  $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:
- UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC---
- UPD---:  $\mu$ PD---

ELECTRICAL PARTS

| Ref. No. | Part No.     | Description    |
|----------|--------------|----------------|
| D101     | 8-719-107-94 | DIODE 1SS202-1 |
| D201     | 8-719-107-94 | DIODE 1SS202-1 |
| D301     | 8-719-200-02 | DIODE 10E-2    |
| D302     | 8-719-200-02 | DIODE 10E-2    |
| D303     | 8-719-200-02 | DIODE 10E-2    |
| D304     | 8-719-200-02 | DIODE 10E-2    |
| D305     | 8-719-910-52 | DIODE HZ15-2L  |
| D306     | 8-719-107-94 | DIODE 1SS202-1 |
| D307     | 8-719-910-67 | DIODE HZ6C1L   |
| D308     | 8-719-107-94 | DIODE 1SS202-1 |
| D309     | 8-719-910-67 | DIODE HZ6C1L   |
| D310     | 8-719-200-02 | DIODE 10E-2    |
| D311     | 8-719-200-02 | DIODE 10E-2    |
| D312     | 8-719-107-94 | DIODE 1SS202-1 |
| D501     | 8-719-200-02 | DIODE 10E-2    |
| D502     | 8-719-200-02 | DIODE 10E-2    |
| D503     | 8-719-200-02 | DIODE 10E-2    |
| D504     | 8-719-200-02 | DIODE 10E-2    |
| D505     | 8-719-931-08 | DIODE EQB01-08 |
| D506     | 8-719-913-62 | DIODE HZ36-2L  |
| D507     | 8-719-910-25 | DIODE HZ12B2L  |
| D508     | 8-719-910-14 | DIODE HZ11B1L  |
| D509     | 8-719-910-94 | DIODE HZ9B1L   |
| D510     | 8-719-910-71 | DIODE HZ7A1L   |
| D511     | 8-719-107-94 | DIODE 1SS202-1 |
| D512     | 8-719-107-94 | DIODE 1SS202-1 |
| D513     | 8-719-107-94 | DIODE 1SS202-1 |
| D514     | 8-719-107-94 | DIODE 1SS202-1 |
| D515     | 8-719-200-02 | DIODE 10E-2    |
| D516     | 8-719-200-02 | DIODE 10E-2    |
| D517     | 8-719-107-94 | DIODE 1SS202-1 |
| D518     | 8-719-107-94 | DIODE 1SS202-1 |
| D519     | 8-719-107-94 | DIODE 1SS202-1 |
| D520     | 8-719-107-94 | DIODE 1SS202-1 |
| D521     | 8-719-107-94 | DIODE 1SS202-1 |
| D701     | 8-719-107-94 | DIODE 1SS202-1 |
| D801     | 8-719-990-42 | DIODE HZ24-2L  |
| D802     | 8-719-107-94 | DIODE 1SS202-1 |
| D803     | 8-719-107-94 | DIODE 1SS202-1 |
| D804     | 8-719-107-94 | DIODE 1SS202-1 |
| D805     | 8-719-107-94 | DIODE 1SS202-1 |
| D806     | 8-719-107-94 | DIODE 1SS202-1 |
| D807     | 8-719-107-94 | DIODE 1SS202-1 |
| D808     | 8-719-107-94 | DIODE 1SS202-1 |
| D809     | 8-719-107-94 | DIODE 1SS202-1 |

ELECTRICAL PARTS

| Ref. No. | Part No.       | Description                        |
|----------|----------------|------------------------------------|
| D810     | 8-719-107-94   | DIODE 1SS202-1                     |
| D811     | 8-719-107-94   | DIODE 1SS202-1                     |
| D812     | 8-719-107-94   | DIODE 1SS202-1                     |
| D813     | 8-719-107-94   | DIODE 1SS202-1                     |
| D814     | 8-719-107-94   | DIODE 1SS202-1                     |
| D815     | 8-719-107-94   | DIODE 1SS202-1                     |
| D816     | 8-719-107-94   | DIODE 1SS202-1                     |
| D817     | 8-719-107-94   | DIODE 1SS202-1                     |
| D818     | 8-719-107-94   | DIODE 1SS202-1                     |
| D819     | 8-719-107-94   | DIODE 1SS202-1                     |
| D820     | 8-719-107-94   | DIODE 1SS202-1                     |
| D821     | 8-719-107-94   | DIODE 1SS202-1                     |
| D822     | 8-719-107-94   | DIODE 1SS202-1                     |
| D823     | 8-719-107-94   | DIODE 1SS202-1                     |
| D824     | 8-719-107-94   | DIODE 1SS202-1                     |
| D825     | 8-719-107-94   | DIODE 1SS202-1                     |
| D826     | 8-719-902-78   | DIODE SLR-34DC5                    |
| D827     | 8-719-934-05   | DIODE SLR-34URC5                   |
| D828     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D829     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D830     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D831     | 8-719-906-46   | DIODE SLR34YC5                     |
| D832     | 8-719-906-46   | DIODE SLR34YC5                     |
| D833     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D834     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D835     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D836     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D837     | 8-719-906-46   | DIODE SLR34YC5                     |
| D838     | 8-719-107-94   | DIODE 1SS202-1                     |
| D901     | 8-719-107-94   | DIODE 1SS202-1                     |
| D902     | 8-719-902-77   | DIODE SLR-34PC5                    |
| D1001    | 8-719-200-02   | DIODE 10E-2                        |
| D1002    | 8-719-200-02   | DIODE 10E-2                        |
| D1003    | 8-719-107-94   | DIODE 1SS202-1                     |
| D1004    | 8-719-107-94   | DIODE 1SS202-1                     |
| D1005    | 8-719-107-94   | DIODE 1SS202-1                     |
| F1       | A.1-532-570-00 | (US).....FUSE, GLASS TUBE          |
| F1       | A.1-532-285-00 | (AEP,G-AEP,E2/3)....FUSE, TIME-LAG |
| F2       | A.1-532-570-00 | (US).....FUSE, GLASS TUBE          |
| F2       | A.1-532-285-00 | (AEP,G-AEP,E2/3)....FUSE, TIME-LAG |
| FL       | 1-519-309-00   | INDICATOR TUBE, FLUORESCENT        |
| IC101    | 8-752-002-80   | IC CX20028                         |
| IC102    | 8-759-600-02   | IC M5218L                          |
| IC201    | 8-752-002-70   | IC CX20027                         |

## NOTE:

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- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF:  $\mu$ F, PF:  $\mu$ uF.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:
- UA... :  $\mu$ A..., UPA... :  $\mu$ PA..., UPC... :  $\mu$ PC,
- UPD... :  $\mu$ PD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description               |
|----------|--------------|---------------------------|
| IC202    | 8-759-600-02 | IC M5218L                 |
| IC301    | 8-759-101-56 | IC CX10033A               |
| IC302    | 8-759-101-55 | IC CX10032A               |
| IC303    | 8-757-919-10 | IC CX-7919A               |
| IC304    | 8-759-961-38 | IC BA6138                 |
| IC305    | 8-759-700-47 | IC CX10035                |
| IC306    | 8-759-600-02 | IC M5218L                 |
| IC307    | 8-759-745-60 | IC NJM4560D               |
| IC308    | 8-759-600-02 | IC M5218L                 |
| IC501    | 8-759-201-90 | IC TMP47C40P-6302         |
| IC502    | 8-755-650-31 | IC CX565-031              |
| IC503    | 8-759-700-48 | IC NJM2903S               |
| IC504    | 8-759-240-66 | IC TC4066BP               |
| IC505    | 8-759-240-66 | IC TC4066BP               |
| IC506    | 8-759-700-46 | IC CX10034                |
| IC507    | 8-759-240-69 | IC TC4069UBP              |
| IC508    | 8-759-240-69 | IC TC4069UBP              |
| IC509    | 8-759-240-69 | IC TC4069UBP              |
| IC701    | 8-759-240-69 | IC TC4069UBP              |
| IC801    | 8-759-201-91 | IC TMP4720N-1008          |
| IC802    | 8-759-904-72 | IC MSL9359RS              |
| IC803    | 8-759-800-76 | IC LB1245                 |
| IC804    | 8-759-800-76 | IC LB1245                 |
| IC805    | 8-759-800-80 | IC LB1200                 |
| J101     | 1-507-797-21 | JACK, LARGE TYPE (L-MIC)  |
| J102     | 1-507-908-11 | JACK, PIN 4P (L-LINE IN)  |
| J103     | 1-507-908-11 | JACK, PIN 4P (L-LINE OUT) |
| J201     | 1-507-797-21 | JACK, LARGE TYPE (R-MIC)  |
| J202     | 1-507-908-11 | JACK, PIN 4P (R-LINE IN)  |
| J203     | 1-507-908-11 | JACK, PIN 4P (R-LINE OUT) |
| J301     | 1-507-796-21 | JACK (HEADPHONES)         |
| L101     | 1-408-930-00 | MICRO INDUCTOR 33MMH      |
| L102     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L103     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L104     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L105     | 1-408-929-00 | MICRO INDUCTOR 27MMH      |
| L106     | 1-408-253-00 | MICRO INDUCTOR 4.7MMH     |
| L201     | 1-408-930-00 | MICRO INDUCTOR 33MMH      |
| L202     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L203     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L204     | 1-408-923-00 | MICRO INDUCTOR 8.2MMH     |
| L205     | 1-408-929-00 | MICRO INDUCTOR 27MMH      |
| L206     | 1-408-253-00 | MICRO INDUCTOR 4.7MMH     |
| L501     | 1-408-080-00 | MICRO INDUCTOR 100UH      |
| L502     | 1-408-080-00 | MICRO INDUCTOR 100UH      |
| LPF101   | 1-235-099-00 | FILTER, LOW PASS          |
| LPF201   | 1-235-099-00 | FILTER, LOW PASS          |

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers ( $\Delta-\Delta\Delta-\Delta\Delta-\Delta\Delta-XX$  or  $\Delta-\Delta\Delta\Delta-\Delta\Delta\Delta-X$ ) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## ELECTRICAL PARTS

| Ref. No. | Part No.       | Description                       |
|----------|----------------|-----------------------------------|
| M1001    | 1-541-239-00   | MOTOR                             |
| M1002    |                | INCLUDED IN (438)                 |
| PL1001   | 1-518-340-71   | LAMP, PILOT (CASSETTE THROUGH)    |
| PL1002   | 1-518-548-11   | LAMP, PILOT (DIR, FWD)            |
| PL1003   | 1-518-548-11   | LAMP, PILOT (DIR, REV)            |
| PM1001   | 1-454-333-00   | SOLENOID, PLUNGER (HEAD)          |
| PM1002   | 1-454-291-00   | SOLENOID, PLUNGER (AMS)           |
| PM1003   | 1-454-363-00   | SOLENOID, PLUNGER (DIR)           |
| PS301    | 1-532-605-00   | LINK, IC                          |
| PS302    | 1-532-605-00   | LINK, IC                          |
| PS501    | 1-532-605-00   | LINK, IC                          |
| PS504    | 1-532-605-00   | LINK, IC                          |
| PT       | ▲.1-447-818-11 | (US).....TRANSFORMER, POWER       |
| PT       | ▲.1-447-819-11 | (E2/3)....TRANSFORMER, POWER      |
| PT       | ▲.1-447-820-11 | (AEP,G-AEP)....TRANSFORMER, POWER |
| Q101     | 8-729-102-03   | TRANSISTOR 2SD1020                |
| Q102     | 8-729-102-03   | TRANSISTOR 2SD1020                |
| Q201     | 8-729-102-03   | TRANSISTOR 2SD1020                |
| Q202     | 8-729-102-03   | TRANSISTOR 2SD1020                |
| Q301     | 8-729-180-93   | TRANSISTOR 2SD809                 |
| Q302     | 8-729-173-13   | TRANSISTOR 2SB731                 |
| Q303     | 8-729-180-93   | TRANSISTOR 2SD809                 |
| Q304     | 8-729-173-13   | TRANSISTOR 2SB731                 |
| Q305     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q306     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q307     | 8-729-178-54   | TRANSISTOR 2SC2785                |
| Q308     | 8-729-178-54   | TRANSISTOR 2SC2785                |
| Q309     | 8-729-178-54   | TRANSISTOR 2SC2785                |
| Q310     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q311     | 8-729-900-63   | TRANSISTOR DTA124ES               |
| Q501     | 8-729-201-78   | TRANSISTOR 2SD1406                |
| Q502     | 8-729-201-78   | TRANSISTOR 2SD1406                |
| Q503     | 8-729-201-78   | TRANSISTOR 2SD1406                |
| Q505     | 8-729-180-93   | TRANSISTOR 2SD809                 |
| Q506     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q507     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q508     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q509     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q510     | 8-729-245-83   | TRANSISTOR 2SC2458                |
| Q511     | 8-729-900-37   | TRANSISTOR DTC124EF               |
| Q512     | 8-729-900-37   | TRANSISTOR DTC124EF               |
| Q513     | 8-729-900-37   | TRANSISTOR DTC124EF               |
| Q514     | 8-729-900-63   | TRANSISTOR DTA124ES               |
| Q515     | 8-729-900-63   | TRANSISTOR DTA124ES               |
| Q516     | 8-729-900-63   | TRANSISTOR DTA124ES               |

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: $\mu$ F, PF: $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:
- UA... :  $\mu$ A..., UPA... :  $\mu$ PA..., UPC... :  $\mu$ PC,
- UPD... :  $\mu$ PD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description  |          |    |      |  |
|----------|--------------|--------------|----------|----|------|--|
| Q517     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q520     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q521     | 8-729-195-23 | TRANSISTOR   | 2SA952   |    |      |  |
| Q522     | 8-729-195-23 | TRANSISTOR   | 2SA952   |    |      |  |
| Q523     | 8-729-102-03 | TRANSISTOR   | 2SD1020  |    |      |  |
| Q524     | 8-729-102-03 | TRANSISTOR   | 2SD1020  |    |      |  |
| Q525     | 8-729-900-63 | TRANSISTOR   | DTA124E  |    |      |  |
| Q526     | 8-729-900-37 | TRANSISTOR   | DTC124EF |    |      |  |
| Q527     | 8-729-180-93 | TRANSISTOR   | 2SD809   |    |      |  |
| Q529     | 8-729-374-02 | TRANSISTOR   | 2SB740   |    |      |  |
| Q530     | 8-729-374-02 | TRANSISTOR   | 2SB740   |    |      |  |
| Q531     | 8-729-177-43 | TRANSISTOR   | 2SD774   |    |      |  |
| Q532     | 8-729-177-43 | TRANSISTOR   | 2SD774   |    |      |  |
| Q533     | 8-729-900-37 | TRANSISTOR   | DTC124EF |    |      |  |
| Q534     | 8-729-900-37 | TRANSISTOR   | DTC124EF |    |      |  |
| Q535     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q536     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q537     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q538     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q701     | 8-729-177-43 | TRANSISTOR   | 2SD774   |    |      |  |
| Q702     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q703     | 8-729-245-83 | TRANSISTOR   | 2SC2458  |    |      |  |
| Q704     | 8-729-245-83 | TRANSISTOR   | 2SC2458  |    |      |  |
| Q705     | 8-729-245-83 | TRANSISTOR   | 2SC2458  |    |      |  |
| Q706     | 8-729-900-37 | TRANSISTOR   | DTC124EF |    |      |  |
| Q707     | 8-729-900-37 | TRANSISTOR   | DTC124EF |    |      |  |
| Q801     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q802     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q803     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q804     | 8-729-900-63 | TRANSISTOR   | DTA124ES |    |      |  |
| Q805     | 8-729-245-83 | TRANSISTOR   | 2SC2458  |    |      |  |
| Q1001    | 8-729-101-02 | TRANSISTOR   | PH102    |    |      |  |
| Q1002    | 8-729-101-02 | TRANSISTOR   | PH102    |    |      |  |
| Q1003    | 1-806-713-11 | PHOTO SENSOR |          |    |      |  |
| R101     | 1-246-506-00 | CARBON       | 24K      | 5% | 1/4W |  |
| R102     | 1-246-512-00 | CARBON       | 43K      | 5% | 1/4W |  |
| R103     | 1-247-155-00 | CARBON       | 10K      | 5% | 1/4W |  |
| R104     | 1-247-115-00 | CARBON       | 220      | 5% | 1/4W |  |
| R105     | 1-247-167-00 | CARBON       | 33K      | 5% | 1/4W |  |
| R106     | 1-246-537-00 | CARBON       | 470K     | 5% | 1/4W |  |
| R107     | 1-246-485-00 | CARBON       | 3.3K     | 5% | 1/4W |  |
| R108     | 1-246-545-00 | CARBON       | 1M       | 5% | 1/4W |  |
| R109     | 1-247-151-00 | CARBON       | 6.8K     | 5% | 1/4W |  |
| R110     | 1-247-119-00 | CARBON       | 330      | 5% | 1/4W |  |
| R111     | 1-247-165-00 | CARBON       | 27K      | 5% | 1/4W |  |
| R112     | 1-247-107-00 | CARBON       | 100      | 5% | 1/4W |  |

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description |      |    |      |  |
|----------|--------------|-------------|------|----|------|--|
| R113     | 1-246-524-00 | CARBON      | 130K | 5% | 1/4W |  |
| R114     | 1-246-490-00 | CARBON      | 5.1K | 5% | 1/4W |  |
| R115     | 1-246-504-00 | CARBON      | 20K  | 5% | 1/4W |  |
| R116     | 1-246-530-00 | CARBON      | 240K | 5% | 1/4W |  |
| R117     | 1-246-499-00 | CARBON      | 12K  | 5% | 1/4W |  |
| R118     | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W |  |
| R121     | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |  |
| R122     | 1-246-466-00 | CARBON      | 510  | 5% | 1/4W |  |
| R123     | 1-214-731-00 | METAL       | 1.2K | 1% | 1/4W |  |
| R124     | 1-247-886-00 | CARBON      | 200K | 5% | 1/6W |  |
| R125     | 1-247-888-00 | CARBON      | 240K | 5% | 1/6W |  |
| R126     | 1-247-887-00 | CARBON      | 220K | 5% | 1/6W |  |
| R127     | 1-247-845-00 | CARBON      | 3.9K | 5% | 1/6W |  |
| R128     | 1-247-886-00 | CARBON      | 200K | 5% | 1/6W |  |
| R129     | 1-247-887-00 | CARBON      | 220K | 5% | 1/6W |  |
| R130     | 1-214-753-00 | METAL       | 10K  | 1% | 1/4W |  |
| R131     | 1-247-820-00 | CARBON      | 360  | 5% | 1/6W |  |
| R132     | 1-247-845-00 | CARBON      | 3.9K | 5% | 1/6W |  |
| R133     | 1-246-490-00 | CARBON      | 5.1K | 5% | 1/4W |  |
| R134     | 1-246-480-00 | CARBON      | 2K   | 5% | 1/4W |  |
| R135     | 1-247-171-00 | CARBON      | 47K  | 5% | 1/4W |  |
| R136     | 1-214-776-00 | METAL       | 91K  | 1% | 1/4W |  |
| R137     | 1-247-149-00 | CARBON      | 5.6K | 5% | 1/4W |  |
| R138     | 1-246-483-00 | CARBON      | 2.7K | 5% | 1/4W |  |
| R139     | 1-246-537-00 | CARBON      | 470K | 5% | 1/4W |  |
| R140     | 1-214-763-00 | METAL       | 27K  | 1% | 1/4W |  |
| R141     | 1-246-466-00 | CARBON      | 510  | 5% | 1/4W |  |
| R142     | 1-214-729-00 | METAL       | 1K   | 1% | 1/4W |  |
| R143     | 1-247-139-00 | CARBON      | 2.2K | 5% | 1/4W |  |
| R151     | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W |  |
| R152     | 1-247-147-00 | CARBON      | 4.7K | 5% | 1/4W |  |
| R153     | 1-247-139-00 | CARBON      | 2.2K | 5% | 1/4W |  |
| R154     | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W |  |
| R155     | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |  |
| R156     | 1-246-529-00 | CARBON      | 220K | 5% | 1/4W |  |
| R157     | 1-246-478-00 | CARBON      | 1.6K | 5% | 1/4W |  |
| R158     | 1-247-159-00 | CARBON      | 15K  | 5% | 1/4W |  |
| R159     | 1-247-857-00 | CARBON      | 12K  | 5% | 1/6W |  |
| R160     | 1-247-807-00 | CARBON      | 100  | 5% | 1/6W |  |
| R161     | 1-247-852-00 | CARBON      | 7.5K | 5% | 1/6W |  |
| R162     | 1-247-791-00 | CARBON      | 22   | 5% | 1/6W |  |
| R163     | 1-247-848-00 | CARBON      | 5.1K | 5% | 1/6W |  |
| R164     | 1-247-857-00 | CARBON      | 12K  | 5% | 1/6W |  |
| R165     | 1-247-791-00 | CARBON      | 22   | 5% | 1/6W |  |
| R166     | 1-247-838-00 | CARBON      | 2K   | 5% | 1/6W |  |

## NOTE:

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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF:  $\mu$ F, PF:  $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:  
UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC,  
UPD---:  $\mu$ PD---

ELECTRICAL PARTS

| Ref. No. | Part No.     | Description | Value | Tolerance | Power |
|----------|--------------|-------------|-------|-----------|-------|
| R167     | 1-247-843-00 | CARBON      | 3.3K  | 5%        | 1/6W  |
| R168     | 1-247-841-00 | CARBON      | 2.7K  | 5%        | 1/6W  |
| R169     | 1-247-815-00 | CARBON      | 220   | 5%        | 1/6W  |
| R170     | 1-247-864-00 | CARBON      | 24K   | 5%        | 1/6W  |
| R171     | 1-247-891-00 | CARBON      | 330K  | 5%        | 1/6W  |
| R172     | 1-247-139-00 | CARBON      | 2.2K  | 5%        | 1/4W  |
| R176     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R177     | 1-247-867-00 | CARBON      | 33K   | 5%        | 1/6W  |
| R178     | 1-246-529-00 | CARBON      | 220K  | 5%        | 1/4W  |
| R179     | 1-247-167-00 | CARBON      | 33K   | 5%        | 1/4W  |
| R180     | 1-247-179-00 | CARBON      | 100K  | 5%        | 1/4W  |
| R181     | 1-247-107-00 | CARBON      | 100   | 5%        | 1/4W  |
| R182     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R183     | 1-247-871-00 | CARBON      | 47K   | 5%        | 1/6W  |
| R184     | 1-247-857-00 | CARBON      | 12K   | 5%        | 1/6W  |
| R185     | 1-247-791-00 | CARBON      | 22    | 5%        | 1/6W  |
| R186     | 1-247-891-00 | CARBON      | 330K  | 5%        | 1/6W  |
| R187     | 1-247-119-00 | CARBON      | 330   | 5%        | 1/4W  |
| R189     | 1-247-879-00 | CARBON      | 100K  | 5%        | 1/6W  |
| R191     | 1-214-777-00 | METAL       | 100K  | 1%        | 1/4W  |
| R192     | 1-214-785-00 | METAL       | 220K  | 1%        | 1/4W  |
| R193     | 1-214-735-00 | METAL       | 1.8K  | 1%        | 1/4W  |
| R194     | 1-214-744-00 | METAL       | 4.3K  | 1%        | 1/4W  |
| R195     | 1-247-902-00 | CARBON      | 910K  | 5%        | 1/6W  |
| R201     | 1-246-506-00 | CARBON      | 24K   | 5%        | 1/4W  |
| R202     | 1-246-512-00 | CARBON      | 43K   | 5%        | 1/4W  |
| R203     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R204     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R205     | 1-247-167-00 | CARBON      | 33K   | 5%        | 1/4W  |
| R206     | 1-246-537-00 | CARBON      | 470K  | 5%        | 1/4W  |
| R207     | 1-246-485-00 | CARBON      | 3.3K  | 5%        | 1/4W  |
| R208     | 1-246-545-00 | CARBON      | 1M    | 5%        | 1/4W  |
| R209     | 1-247-151-00 | CARBON      | 6.8K  | 5%        | 1/4W  |
| R210     | 1-247-119-00 | CARBON      | 330   | 5%        | 1/4W  |
| R211     | 1-247-165-00 | CARBON      | 27K   | 5%        | 1/4W  |
| R212     | 1-247-107-00 | CARBON      | 100   | 5%        | 1/4W  |
| R213     | 1-246-524-00 | CARBON      | 130K  | 5%        | 1/4W  |
| R214     | 1-246-490-00 | CARBON      | 5.1K  | 5%        | 1/4W  |
| R215     | 1-246-504-00 | CARBON      | 20K   | 5%        | 1/4W  |
| R216     | 1-246-530-00 | CARBON      | 240K  | 5%        | 1/4W  |
| R217     | 1-246-499-00 | CARBON      | 12K   | 5%        | 1/4W  |
| R218     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R221     | 1-247-831-00 | CARBON      | 1K    | 5%        | 1/6W  |
| R222     | 1-246-466-00 | CARBON      | 510   | 5%        | 1/4W  |
| R223     | 1-214-731-00 | METAL       | 1.2K  | 1%        | 1/4W  |

ELECTRICAL PARTS

|      |              |        |      |    |      |
|------|--------------|--------|------|----|------|
| R224 | 1-247-886-00 | CARBON | 200K | 5% | 1/6W |
| R225 | 1-247-888-00 | CARBON | 240K | 5% | 1/6W |
| R226 | 1-247-887-00 | CARBON | 220K | 5% | 1/6W |
| R227 | 1-247-845-00 | CARBON | 3.9K | 5% | 1/6W |
| R228 | 1-247-886-00 | CARBON | 200K | 5% | 1/6W |
| R229 | 1-247-887-00 | CARBON | 220K | 5% | 1/6W |
| R230 | 1-214-753-00 | METAL  | 10K  | 1% | 1/4W |
| R231 | 1-247-820-00 | CARBON | 360  | 5% | 1/6W |
| R232 | 1-247-845-00 | CARBON | 3.9K | 5% | 1/6W |
| R233 | 1-246-490-00 | CARBON | 5.1K | 5% | 1/4W |
| R234 | 1-246-480-00 | CARBON | 2K   | 5% | 1/4W |
| R235 | 1-247-171-00 | CARBON | 47K  | 5% | 1/4W |
| R236 | 1-214-776-00 | METAL  | 91K  | 1% | 1/4W |
| R237 | 1-247-149-00 | CARBON | 5.6K | 5% | 1/4W |
| R238 | 1-246-483-00 | CARBON | 2.7K | 5% | 1/4W |
| R239 | 1-246-537-00 | CARBON | 470K | 5% | 1/4W |
| R240 | 1-214-763-00 | METAL  | 27K  | 1% | 1/4W |
| R241 | 1-246-466-00 | CARBON | 510  | 5% | 1/4W |
| R242 | 1-214-729-00 | METAL  | 1K   | 1% | 1/4W |
| R243 | 1-247-139-00 | CARBON | 2.2K | 5% | 1/4W |
| R251 | 1-247-155-00 | CARBON | 10K  | 5% | 1/4W |
| R252 | 1-247-147-00 | CARBON | 4.7K | 5% | 1/4W |
| R253 | 1-247-139-00 | CARBON | 2.2K | 5% | 1/4W |
| R254 | 1-247-155-00 | CARBON | 10K  | 5% | 1/4W |
| R255 | 1-247-831-00 | CARBON | 1K   | 5% | 1/6W |
| R256 | 1-246-529-00 | CARBON | 220K | 5% | 1/4W |
| R257 | 1-246-478-00 | CARBON | 1.6K | 5% | 1/4W |
| R258 | 1-247-159-00 | CARBON | 15K  | 5% | 1/4W |
| R259 | 1-247-857-00 | CARBON | 12K  | 5% | 1/6W |
| R260 | 1-247-807-00 | CARBON | 100  | 5% | 1/6W |
| R261 | 1-247-852-00 | CARBON | 7.5K | 5% | 1/6W |
| R262 | 1-247-791-00 | CARBON | 22   | 5% | 1/6W |
| R263 | 1-247-848-00 | CARBON | 5.1K | 5% | 1/6W |
| R264 | 1-247-857-00 | CARBON | 12K  | 5% | 1/6W |
| R265 | 1-247-791-00 | CARBON | 22   | 5% | 1/6W |
| R266 | 1-247-838-00 | CARBON | 2K   | 5% | 1/6W |
| R267 | 1-247-843-00 | CARBON | 3.3K | 5% | 1/6W |
| R268 | 1-247-841-00 | CARBON | 2.7K | 5% | 1/6W |
| R269 | 1-247-815-00 | CARBON | 220  | 5% | 1/6W |
| R270 | 1-247-864-00 | CARBON | 24K  | 5% | 1/6W |
| R271 | 1-247-891-00 | CARBON | 330K | 5% | 1/6W |
| R272 | 1-247-139-00 | CARBON | 2.2K | 5% | 1/4W |
| R276 | 1-247-155-00 | CARBON | 10K  | 5% | 1/4W |
| R277 | 1-247-867-00 | CARBON | 33K  | 5% | 1/6W |
| R278 | 1-246-529-00 | CARBON | 220K | 5% | 1/4W |

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

## COILS

- MMH : mH, UH :  $\mu$ H

- SEMICONDUCTORS
  - In each case, U :  $\mu$ , for example:  
UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC,  
UPD---:  $\mu$ PD---

## ELECTRICAL PARTS

| Ref.No. | Part No.     | Description |      |    |      |
|---------|--------------|-------------|------|----|------|
| R279    | 1-247-167-00 | CARBON      | 33K  | 5% | 1/4W |
| R280    | 1-247-179-00 | CARBON      | 100K | 5% | 1/4W |
| R281    | 1-247-107-00 | CARBON      | 100  | 5% | 1/4W |
| R282    | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W |
| R283    | 1-247-871-00 | CARBON      | 47K  | 5% | 1/6W |
| R284    | 1-247-857-00 | CARBON      | 12K  | 5% | 1/6W |
| R285    | 1-247-791-00 | CARBON      | 22   | 5% | 1/6W |
| R286    | 1-247-891-00 | CARBON      | 330K | 5% | 1/6W |
| R287    | 1-247-119-00 | CARBON      | 330  | 5% | 1/4W |
| R289    | 1-247-879-00 | CARBON      | 100K | 5% | 1/6W |
| R291    | 1-214-777-00 | METAL       | 100K | 1% | 1/4W |
| R292    | 1-214-785-00 | METAL       | 220K | 1% | 1/4W |
| R293    | 1-214-735-00 | METAL       | 1.8K | 1% | 1/4W |
| R294    | 1-214-744-00 | METAL       | 4.3K | 1% | 1/4W |
| R295    | 1-247-902-00 | CARBON      | 910K | 5% | 1/6W |
| R301    | 1-246-482-00 | CARBON      | 2.4K | 5% | 1/4W |
| R302    | 1-246-499-00 | CARBON      | 12K  | 5% | 1/4W |
| R303    | 1-247-139-00 | CARBON      | 2.2K | 5% | 1/4W |
| R304    | 1-246-500-00 | CARBON      | 13K  | 5% | 1/4W |
| R305    | 1-247-855-00 | CARBON      | 10K  | 5% | 1/6W |
| R306    | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |
| R307    | 1-247-838-00 | CARBON      | 2K   | 5% | 1/6W |
| R308    | 1-247-863-00 | CARBON      | 22K  | 5% | 1/6W |
| R309    | 1-247-843-00 | CARBON      | 3.3K | 5% | 1/6W |
| R311    | 1-247-845-00 | CARBON      | 3.9K | 5% | 1/6W |
| R312    | 1-247-855-00 | CARBON      | 10K  | 5% | 1/6W |
| R313    | 1-247-855-00 | CARBON      | 10K  | 5% | 1/6W |
| R315    | 1-247-873-00 | CARBON      | 56K  | 5% | 1/6W |
| R316    | 1-247-873-00 | CARBON      | 56K  | 5% | 1/6W |
| R317    | 1-217-527-00 | FUSIBLE     | 22   | 5% | 1/4W |
| R324    | 1-247-848-00 | CARBON      | 5.1K | 5% | 1/6W |
| R325    | 1-247-848-00 | CARBON      | 5.1K | 5% | 1/6W |
| R326    | 1-247-848-00 | CARBON      | 5.1K | 5% | 1/6W |
| R327    | 1-247-845-00 | CARBON      | 3.9K | 5% | 1/6W |
| R328    | 1-247-823-00 | CARBON      | 470  | 5% | 1/6W |
| R331    | 1-247-115-00 | CARBON      | 220  | 5% | 1/4W |
| R332    | 1-247-115-00 | CARBON      | 220  | 5% | 1/4W |
| R336    | 1-247-843-00 | CARBON      | 3.3K | 5% | 1/6W |
| R337    | 1-247-847-00 | CARBON      | 4.7K | 5% | 1/6W |
| R338    | 1-247-875-00 | CARBON      | 68K  | 5% | 1/6W |
| R339    | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |
| R340    | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |
| R341    | 1-247-831-00 | CARBON      | 1K   | 5% | 1/6W |
| R342    | 1-247-847-00 | CARBON      | 4.7K | 5% | 1/6W |
| R343    | 1-247-847-00 | CARBON      | 4.7K | 5% | 1/6W |

## ELECTRICAL PARTS

| Ref.No. | Part No.     | Description |      |    |        |
|---------|--------------|-------------|------|----|--------|
| R344    | 1-247-871-00 | CARBON      | 47K  | 5% | 1/6W   |
| R501    | 1-247-147-00 | CARBON      | 4.7K | 5% | 1/4W   |
| R502    | 1-247-107-00 | CARBON      | 100  | 5% | 1/4W   |
| R503    | 1-247-171-00 | CARBON      | 47K  | 5% | 1/4W   |
| R505    | 1-247-131-00 | CARBON      | 1K   | 5% | 1/4W   |
| R506    | 1-212-849-00 | FUSIBLE     | 4.7  | 5% | 1/4W F |
| R507    | 1-247-131-00 | CARBON      | 1K   | 5% | 1/4W   |
| R508    | 1-212-956-00 | FUSIBLE     | 8.2  | 5% | 1/2W F |
| R509    | 1-247-145-00 | CARBON      | 3.9K | 5% | 1/4W   |
| R510    | 1-212-956-00 | FUSIBLE     | 8.2  | 5% | 1/2W F |
| R511    | 1-247-131-00 | CARBON      | 1K   | 5% | 1/4W   |
| R513    | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W   |
| R514    | 1-214-753-00 | METAL       | 10K  | 1% | 1/4W   |
| R515    | 1-214-154-00 | METAL       | 8.2K | 1% | 1/4W   |
| R516    | 1-214-754-00 | METAL       | 11K  | 1% | 1/4W   |
| R517    | 1-247-167-00 | CARBON      | 33K  | 5% | 1/4W   |
| R518    | 1-247-145-00 | CARBON      | 3.9K | 5% | 1/4W   |
| R519    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R520    | 1-247-147-00 | CARBON      | 4.7K | 5% | 1/4W   |
| R521    | 1-247-155-00 | CARBON      | 10K  | 5% | 1/4W   |
| R524    | 1-247-147-00 | CARBON      | 4.7K | 5% | 1/4W   |
| R525    | 1-247-147-00 | CARBON      | 4.7K | 5% | 1/4W   |
| R526    | 1-247-167-00 | CARBON      | 33K  | 5% | 1/4W   |
| R527    | 1-246-511-00 | CARBON      | 39K  | 5% | 1/4W   |
| R528    | 1-246-455-00 | CARBON      | 180  | 5% | 1/4W   |
| R529    | 1-246-545-00 | CARBON      | 1M   | 5% | 1/4W   |
| R530    | 1-246-500-00 | CARBON      | 13K  | 5% | 1/4W   |
| R531    | 1-246-500-00 | CARBON      | 13K  | 5% | 1/4W   |
| R532    | 1-246-500-00 | CARBON      | 13K  | 5% | 1/4W   |
| R533    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R534    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R535    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R536    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R537    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R538    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R539    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R540    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R541    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R542    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R543    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R544    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R545    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R546    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R547    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |
| R548    | 1-246-505-00 | CARBON      | 22K  | 5% | 1/4W   |

## NOTE:

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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.

MF:  $\mu\text{F}$ , PF:  $\mu\mu\text{F}$ .

## COILS

MMH :  $\text{mH}$ , UH :  $\mu\text{H}$ 

## SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
 UA... :  $\mu\text{A}$ ..., UPA... :  $\mu\text{PA}$ ..., UPC... :  $\mu\text{PC}$ ,

UPD... :  $\mu\text{PD}$ ...

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description | Value | Tolerance | Power |
|----------|--------------|-------------|-------|-----------|-------|
| R549     | 1-246-505-00 | CARBON      | 22K   | 5%        | 1/4W  |
| R550     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R551     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R552     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R553     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R554     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R555     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R556     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R557     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R558     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R559     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R560     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R561     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R563     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R566     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R567     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R568     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R569     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R570     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R571     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R572     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R573     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R574     | 1-247-119-00 | CARBON      | 330   | 5%        | 1/4W  |
| R575     | 1-246-468-00 | CARBON      | 620   | 5%        | 1/4W  |
| R576     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R578     | 1-247-179-00 | CARBON      | 100K  | 5%        | 1/4W  |
| R579     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R580     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R581     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R582     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R583     | 1-206-473-00 | METAL OXIDE | 27    | 5%        | 2W F  |
| R585     | 1-247-179-00 | CARBON      | 100K  | 5%        | 1/4W  |
| R586     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R587     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R588     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R589     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R590     | 1-247-107-00 | CARBON      | 100   | 5%        | 1/4W  |
| R591     | 1-247-107-00 | CARBON      | 100   | 5%        | 1/4W  |
| R592     | 1-246-531-00 | CARBON      | 270K  | 5%        | 1/4W  |
| R593     | 1-246-531-00 | CARBON      | 270K  | 5%        | 1/4W  |
| R594     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R595     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R596     | 1-246-505-00 | CARBON      | 22K   | 5%        | 1/4W  |
| R600     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R601     | 1-247-123-00 | CARBON      | 470   | 5%        | 1/4W  |

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description | Value | Tolerance | Power |
|----------|--------------|-------------|-------|-----------|-------|
| R602     | 1-214-729-00 | METAL       | 1K    | 5%        | 1/4W  |
| R605     | 1-246-505-00 | CARBON      | 22K   | 5%        | 1/4W  |
| R606     | 1-246-492-00 | CARBON      | 6.2K  | 5%        | 1/4W  |
| R607     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R608     | 1-247-179-00 | CARBON      | 100K  | 5%        | 1/4W  |
| R609     | 1-246-502-00 | CARBON      | 16K   | 5%        | 1/4W  |
| R611     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R613     | 1-247-783-00 | CARBON      | 10    | 5%        | 1/6W  |
| R701     | 1-247-115-00 | CARBON      | 220   | 5%        | 1/4W  |
| R702     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R703     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R704     | 1-246-452-00 | CARBON      | 130   | 5%        | 1/4W  |
| R705     | 1-247-149-00 | CARBON      | 5.6K  | 5%        | 1/4W  |
| R706     | 1-246-495-00 | CARBON      | 8.2K  | 5%        | 1/4W  |
| R707     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R708     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R709     | 1-246-514-00 | CARBON      | 51K   | 5%        | 1/4W  |
| R710     | 1-246-514-00 | CARBON      | 51K   | 5%        | 1/4W  |
| R711     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R712     | 1-247-155-00 | CARBON      | 10K   | 5%        | 1/4W  |
| R713     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R714     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R715     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R716     | 1-247-171-00 | CARBON      | 47K   | 5%        | 1/4W  |
| R717     | 1-246-529-00 | CARBON      | 220K  | 5%        | 1/4W  |
| R718     | 1-246-505-00 | CARBON      | 22K   | 5%        | 1/4W  |
| R719     | 1-246-529-00 | CARBON      | 220K  | 5%        | 1/4W  |
| R720     | 1-247-159-00 | CARBON      | 15K   | 5%        | 1/4W  |
| R721     | 1-247-159-00 | CARBON      | 15K   | 5%        | 1/4W  |
| R722     | 1-247-147-00 | CARBON      | 4.7K  | 5%        | 1/4W  |
| R723     | 1-247-131-00 | CARBON      | 1K    | 5%        | 1/4W  |
| R805     | 1-247-875-00 | CARBON      | 68K   | 5%        | 1/6W  |
| R806     | 1-247-875-00 | CARBON      | 68K   | 5%        | 1/6W  |
| R807     | 1-246-458-00 | CARBON      | 240   | 5%        | 1/4W  |
| R808     | 1-247-895-00 | CARBON      | 470K  | 5%        | 1/6W  |
| R809     | 1-247-872-00 | CARBON      | 51K   | 5%        | 1/6W  |
| R810     | 1-247-872-00 | CARBON      | 51K   | 5%        | 1/6W  |
| R811     | 1-247-861-00 | CARBON      | 18K   | 5%        | 1/6W  |
| R812     | 1-247-847-00 | CARBON      | 4.7K  | 5%        | 1/6W  |
| R813     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R814     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R815     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R816     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R817     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R818     | 1-247-863-00 | CARBON      | 22K   | 5%        | 1/6W  |
| R819     | 1-246-443-00 | CARBON      | 56    | 5%        | 1/4W  |

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

## CAPACITORS:

- All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF:  $\mu\text{F}$ , PF:  $\mu\mu\text{F}$ .

## COILS

- MMH :  $\text{mH}$ , UH :  $\mu\text{H}$

## SEMICONDUCTORS

- In each case, U :  $\mu$ , for example:  
UA---:  $\mu\text{A}$ ---, UPA---:  $\mu\text{PA}$ ---, UPC---:  $\mu\text{PC}$ ,  
UPD---:  $\mu\text{PD}$ ---

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

## ELECTRICAL PARTS

| Ref. No. | Part No.       | Description                     |
|----------|----------------|---------------------------------|
| R820     | 1-246-443-00   | CARBON 56 5% 1/4W               |
| R821     | 1-247-863-00   | CARBON 22K 5% 1/6W              |
| R822     | A.1-202-862-00 | SOLID 220 1/4W F                |
| RV101    | 1-228-542-00   | RES, ADJ, METAL GLAZE 10K       |
| RV102    | 1-228-542-00   | RES, ADJ, METAL GLAZE 10K       |
| RV103    | 1-226-236-00   | RES, ADJ, CARBON 10K            |
| RV201    | 1-228-542-00   | RES, ADJ, METAL GLAZE 10K       |
| RV202    | 1-228-542-00   | RES, ADJ, METAL GLAZE 10K       |
| RV203    | 1-226-236-00   | RES, ADJ, CARBON 10K            |
| RV701    | 1-226-236-00   | RES, ADJ, CARBON 10K            |
| RY1      | 1-515-323-00   | RELAY                           |
| S001     | A.1-553-318-00 | SWITCH, PUSH (AC POWER) (1 KEY) |
| S601     | 1-554-208-00   | SWITCH, SLIDE (TIMER)           |
| S701     | 1-554-649-00   | SWITCH, PUSH (4 KEY) (REV MODE) |
| S702     | 1-554-649-00   | SWITCH, PUSH (4 KEY) (REV MODE) |
| S703     | 1-554-649-00   | SWITCH, PUSH (4 KEY) (REV MODE) |
| S704     | 1-554-649-00   | SWITCH, PUSH (4 KEY) (REV MODE) |
| S802     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S803     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S804     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S805     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S806     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S807     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S808     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S809     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S810     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S811     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S812     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S813     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S814     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S815     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S816     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S817     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S818     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S819     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S820     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S821     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S822     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S823     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S824     | 1-554-303-00   | SWITCH, KEY BOARD               |
| S825     | 1-554-303-00   | SWITCH, KEY BOARD               |

## ELECTRICAL PARTS

| Ref. No. | Part No.     | Description                  |
|----------|--------------|------------------------------|
| S901     | 1-554-303-00 | SWITCH, KEY BOARD            |
| S1001    | 1-554-205-00 | SWITCH, PUSH (LEVER DET)     |
| S1002    | 1-554-205-00 | SWITCH, PUSH (LEVER DET)     |
| S1003    | 1-554-205-00 | SWITCH, PUSH (LEVER DET)     |
| S1004    | 1-554-205-00 | SWITCH, PUSH (LEVER DET)     |
| S1005    | 1-554-205-00 | SWITCH, PUSH (LEVER DET)     |
| S1006    | 1-516-323-XX | SLIDE SWITCH (DIR)           |
| SSF102   | 1-235-186-00 | ENCAPSULATED COMPONENT       |
| SSF202   | 1-235-186-00 | ENCAPSULATED COMPONENT       |
| T301     | 1-433-277-00 | TRANSFORMER, BIAS OSCILLATOR |
| X501     | 1-567-160-00 | OSCILLATOR, CERAMIC          |

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## CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF:  $\mu$ F, PF:  $\mu\mu$ F.

## COILS

- MMH : mH, UH :  $\mu$ H

## SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
 UA---:  $\mu$ A---, UPA---:  $\mu$ PA---, UPC---:  $\mu$ PC,  
 UPD---:  $\mu$ PD---

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Sony Corporation

## Technik als Verkaufsargument

Produktart:

**HIFI / TC****TC-FX-707R****QUICK-REVERSE-SYSTEM**

Unter der Typenbezeichnung TC-FX-707R bietet Sony ein HiFi- Cassettendeck mit Reverse-Funktion für Aufnahme und Wiedergabe an. Neben vielen Ausstattungsmerkmalen für die neueste und hochwertigste Technik eingesetzt wird wie z.B.

- Memory-Funktionen zum Abspeichern von Aufnahme- bzw. Wiedergabeeinstellungen (z.B. Bandart, Line Out Pegel usw.)
- Fader-Funktion zum weichen Ein- und Ausblenden
- Digital-Level-Monitor  
Hier werden alle wichtigen Werte und Einstellungen angezeigt (Rec-Level, Line Out Pegel, Dolby usw.)
- Laufwerkfunktions-Speicher  
bis zu 8 Laufwerkfunktionen sind abzuspeichern und können hintereinander abgerufen werden

besitzt dieser Recorder ein Quick-Reverse-System.

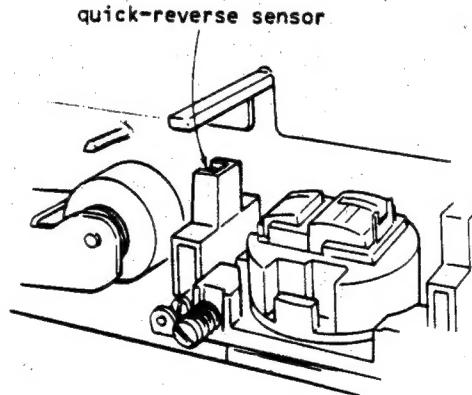
Welche Überlegung steht dahinter?

Logischerweise ist ein im Auto-Reverse-Betrieb arbeitender Recorder für die Aufnahmefunktion nur dann interessant, wer während der Aufnahme schnellstens bei Bandende auf Reverse-Betrieb - also in die andere Laufrichtung - umgeschaltet wird. Bei den meisten Recordern erfolgt diese Umschaltung allerdings erst, wenn der Cassettenlauf anhält. Da jede gute Cassette jedoch ein Vor- bzw. Nachspannband besitzt, geht wertvolle Zeit verloren, in der nichts aufgezeichnet wird. Darum entwickelte SONY ein Quick-Reverse-System, das wie nachfolgend beschrieben arbeitet:

# Technik als Verkaufsargument

- Seite 2 -

Bezogen auf die normale Vorwärts-Laufrichtung sitzt vor der Kopfeinheit ein Infrarotsensor, dem gegenüber ein Reflektor angeordnet ist. Da die Oberflächen und damit auch die optischen Eigenschaften des Magnet- und des Vorspannbandes unterschiedlich sind, kann dieser Sensor erkennen, wann das Magnetband aufhört. Diese Information wird an die Systemkontrollsteuerung weitergegeben. Die Folge hiervon ist, daß der Recorder am Ende des Magnetbandes, also bevor der Cassettenlauf anhält, schon auf die Reverselaufrichtung schaltet und nur mit minimaler Unterbrechung weiter aufzeichnet. Dieses **Quick-Reverse-System** kann ein- oder ausgeschaltet werden. Im abgeschalteten Zustand wechselt der Recorder, wie die meisten seiner Mitstreiter erst beim Anhalten des Cassettenlaufs. Die nachfolgende Skizze zeigt die Anordnung des Quick-Reverse-Sensors auf der Kopf-Basis-Platte.



WE/kr. 08'84